Chapters 6 - 11

Overview of Indiana's Multimodal Transportation System Plans and Programs

- *Indiana State Aviation System Plan*
- *Indiana Bicycle and Pedestrian Facility Planning and Development Plan*
- *Indiana's Highway System Plan*
- *Indiana Port Commission Strategic Plan and Business Plans*
- *Indiana Railroad Planning Program*
- *Indiana Public Transit System Plan*

Chapter 6

Indiana State Aviation System Plan

Indiana State Aviation System Plan

Introduction

The *Indiana State Aviation System Plan* is the principal means by which the State of Indiana identifies airports to serve present and future air transportation needs of the state. The *Indiana State Aviation System Plan* is also used to identify airport development projects that are consistent with state policies, goals, objectives and priorities. The system of airports documented in the *Indiana State Aviation System Plan* are incorporated into both local and regional airport master plans and the Federal Aviation Administration's *National Plan of Integrated Airport Systems.*

The *Indiana State Aviation System Plan* serves as a strategic "blueprint" for aviation system development by the State of Indiana and the Federal Aviation Administration. The *Indiana State Aviation System Plan* also identifies an updated set of "System Plan Facilities" that constitute Indiana's core of aviation facility assets. Aviation facilities identified as "System Plan Facilities" will be the principal recipients of Indiana's strategic development initiatives through the remainder of this decade.

The primary purpose of *1995-2015 Indiana State Aviation System Plan* is to:

- Identify the State of Indiana's aviation system planning goals and objectives;
- Outline Indiana's aviation system planning program which uses established, consistently quantifiable methods for measuring the performance of all state airports;
- Provide a brief profile of system-level performance, including pilots, passenger enplanements, registered and based aircraft, and airport operations;
- Delineate Indiana's "State System Plan Facilities" that are recognized by the Indiana Department of Transportation and the Federal Aviation Administration as the state's most important aviation facilities;

- Identify the opportunities and challenges that Indiana's aviation system will face through the remainder of this decade.

- Identify Indiana's capital improvement program priorities for the state airport system;

Air transportation is crucial to the success of Indiana's economy. Indiana cities and counties benefit directly and indirectly from air transportation through accessibility to global and domestic markets, infrastructure investments, jobs, tourism, and the location of small and medium-sized industries. Many of Indiana's industries and businesses rely on convenient, all-weather access to the nation's airways, particularly when they serve distant markets. A safe, accessible and efficient air transportation system greatly improves the competitive posture of Indiana's economy. Aviation also supports agricultural production, emergency health services, fire fighting, and recreation. The Aviation Association of Indiana has conservatively estimated the economic benefit of aviation to Indiana in 1993 to be well over $2.6 billion.

Aviation Planning Goals

Aviation planning goals of the Indiana Department of Transportation identified below focus on several key issues. These issues, presented below in rank order, concern the safety and congestion of the aviation system, maintenance and preservation of the system, air travel demands, cost efficiency and effectiveness, and economic development.

- ***An Airport System Which Is Safe and Minimizes Airspace and Airport Congestion.*** Aviation safety is an important goal of the State of Indiana. The Indiana Department of Transportation shares responsibility with the Federal Aviation Administration for protecting the safety of aviation users in Indiana. Airport inspections are the primary method used by the State of Indiana to verify the safety of public use airports. The Indiana Department of Transportation inspects public-use airports on an annual basis to evaluate runway and taxiway pavements, possible approach obstructions, lighting systems, and other safety aspects. The Department of Transportation also certifies the airports that meet state standards and endeavors through various means to ensure all public airports meet minimal safety standards.

  Safety is further enhanced by the "Tall Structures Act", the primary law used by the Indiana Department of Transportation to review construction that may affect navigable airspace. The

objective of this law is to guarantee that the placement of tall structures will not endanger enroute, visual, and instrument approaches to existing and planned public-use airports. The State of Indiana also provides financial assistance for safety improvements. Safety considerations are a high priority in the distribution of federal and state aid.

- ***Maintain and Preserve the Existing State Airport System.*** The State of Indiana's airport system was developed over the past 50 years to meet the existing and future demand at the state's public-use airports. The state's airport system of the future is virtually in place. This fact, coupled with an acute shortage of federal capital funds for general aviation, compels the Indiana Department of Transportation to use all available federal, state, and local funds to maintain and preserve existing facilities (e.g., runway paving, increased runway lengths, new lighting system, etc.) of the system. The Indiana Department of Transportation uses a priority system developed by the Federal Aviation Administration in determining the allocation and use of federal funds. This priority system favors those projects that are used to preserve and maintain existing airport facilities. Indiana's airport system has required a large amount of private and public money to develop, and the State must now take steps to protect and preserve this investment.

- ***Provide a public airport system that meets the air travel demands of Indiana's Citizens and Businesses.*** Indiana's "State System Plan Facilities" are located and designed to meet the demands of the state's residents, businesses, industries, and all other aviation system users. Measurements of air travel demand are derived from local sponsor planning studies, state management systems, and other appropriate federally sponsored studies. The *Indiana State Airport System Plan* provides forecasts of future aviation demand through the year 2014. Based on these forecasts, the Indiana Department of Transportation has determined which airports will require modification, improvement, expansion, or where new airports may be required to meet future demand. These forecasts allow the Indiana Department of Transportation to place the needed aviation facilities at airports that warrant the demand. Development of an airport system that meets current and expected future demands is a primary goal of the State of Indiana, and is closely tied to the goal of system maintenance and preservation.

Accessibility is a second criteria Indiana traditionally uses to address statewide air travel demands. The geographical distribution of the "State System Plan Facilities" provides that 90% of the state's population would be located within thirty (30) minutes drive time to facilities serving general aviation and no more than forty-five (45) minutes drive time to scheduled air service.

- ***An Airport System Which is Cost-effective and Adaptable to Changes in Demand or Technology.*** The Indiana Department of Transportation is committed to making investments in airports and to provide the latest technology in an efficient and cost-effective manner. Each request for funding is evaluated using the Federal Aviation Administration priority system to (1) receive the maximum allowable federal funds, (2) to determine the best projects for funding, and (3) the timing of projects. The Department strongly encourages coordination between local airports to minimize service duplications.

  The Department will inform airports in the state system of technological changes and their impacts. Airport owners can work closely with the state in determining changes in demand that may result from new technology.

- ***Provide an Airport System Which Assists the Implementation of State Development Plans and is Consistent with the Economic Goals of the State.*** The state airport system can be an important variable in retaining and attracting business and industry to invest in Indiana. Where necessary, the Indiana Department of Transportation will coordinate or help secure funding for airport improvements that lead to business retention or attract new business and industry.

System Plan Objectives

The principle purpose of the *1995-2015 Indiana State Aviation System Plan* and associated federal, state, regional, and local aviation planning studies is to document changes in the state's aviation system, to quantify these changes, and to draw conclusions from past system behavior. These conclusions may then be systematically applied to future activity forecasts for determining facility needs, funding priorities, and for the development of strategic policy directions throughout Indiana.

Objectives of the *Indiana State Aviation System Plan* include:

- ***Redefinition of Priority Directions.*** The *Indiana State Aviation System Plan* was last updated by the State of Indiana in 1983. Priority directions for the state's aviation system must therefore be realigned in light of fundamental changes on the national, state, regional, and local levels. Major determinants of change, such as airline mergers, service consolidations, multimodal competition, small aircraft product liability, and economic sector shifts will account for and continue to shape many of these future directions.

- ***Update System Resource Requirements.*** The total level of resources needed for continued development of the state aviation system and the allocation of these resources among competing needs must be determined given increasing demands of an aging infrastructure and the limited availability of federal funds.

- ***Promote Federal Assistance Eligibility.*** The Indiana Department of Transportation and local airport sponsors have been highly successful in using ***all*** available entitlement funds and in maximizing the capture of federal discretionary funds for airport development. Nevertheless, federal assistance eligibility can be further increased through a comprehensive review of facility service levels and airport roles.

- ***Fulfill State Statutory Obligations.*** The Indiana Department of Transportation is responsible for the development and continuous update of the *Indiana State Aviation System Plan* as specified under I.C. 8-21-1-8(d). This obligation carries with it the responsibility to determine the extent, type, nature, location, and the timing of Indiana's airport development needs, and to provide for an orderly and systematic development process.

- ***Establish a Proactive Framework for Indiana's Aviation System.*** Aviation must be recognized for the transportation access that it provides to international, interstate, and intrastate business markets. Within the context of today's competitive business environment and the increasing interdependence of Indiana's economy with a global economy, aviation provides a crucial advantage to Indiana for business development and job creation.

- ***Reinforce Strategic Development Partnerships.*** The aviation system must be used to encourage both public and private partnership investments throughout Indiana. Local units of governments must also recognize opportunities for corresponding strategic development that enhances existing aviation facility investments while minimizing intrastate regional competition.

- ***Exploit Competitive Economic Advantages.*** The State of Indiana and its employers have distinct competitive advantages over other areas of the nation. Such advantages are enhanced by the presence of an aviation infrastructure that provides for high levels of market accessibility and corporate productivity. These two factors are important for sustained job growth and new economic development opportunities.

As previously noted, the *1995-2015 Indiana State Aviation System Plan* serves as a strategic "blueprint" for aviation system development by the State of Indiana and the Federal Aviation Administration. The *1995-2015 Indiana State Aviation System Plan* formally identifies an updated set of "System Plan Facilities" that constitute Indiana's core of aviation facility assets. Aviation facilities identified as "System Plan Facilities" will be the principal recipients of Indiana's strategic development initiatives through the remainder of this decade.

Aviation System Planning Program

The overall goal of the Indiana Department of Transportation's aviation system planning program is to establish an aviation management system designed as a "decision support tool" for the improvement of statewide, regional, and local aviation transportation systems. By their very nature, decision support tools encourage cost-efficient and cost-effective decision making processes which ideally lead to improved safety, preservation, and capacity enhancement projects throughout Indiana.

Perhaps more important is the fact that this aviation planning program and its management system provide state policy makers a sound core of knowledge to recognize system level changes. These changes may then be used to identify unique opportunities, to develop solutions for addressing potential challenges, to develop alternative management strategies, and to monitor the long-term effectiveness of implemented strategies.

The Indiana Department of Transportation's aviation management system elements are categorized by function. As noted below, these functions and elements include:

Administration

- ***Airport Inspection and Certification:*** The Indiana Department of Transportation, under 105 IAC 3-3-1, is responsible for airport site approvals and operating certificates of approval. The purpose of this requirement is to provide for the protection and promotion of state aeronautical safety.

- ***FAA Master Record Program:*** Under a contractual agreement, the Indiana Department of Transportation is required to collect, maintain, and disseminate accurate, complete, and timely airport data for aviation facilities located in the state. This material is used to provide pilots throughout the nation with federally required flight planning information regarding the State of Indiana.

- ***Regulation of Tall Structures:*** The Indiana Department of Transportation is responsible under I.C. 8-21-10 for regulating the location and height of structures, the use of land related to those structures, and land near public-use airports. This responsibility protects persons and property in the air and on the ground and provides for the continued and future usage of aviation-related communications equipment within the state.

Planning and Project Management

- ***Indiana State Aviation System Plan Update:*** As specified under I.C. 8-21-1-8(d), the Indiana Department of Transportation is responsible for the development and continuous update of the *Indiana State Aviation System Plan*. The purpose of this plan is to determine the extent, type, nature, location, and timing of Indiana's airport development needs. The system plan also provides an orderly and systematic development process for selected public-use airports throughout the state and maintains eligibility for federal funding assistance from the Federal Aviation Administration. Supporting projects and studies which are incorporated into the current update of the *Indiana State Aviation System Plan* include:

1. ***Indianapolis International Airport Capacity Enhancement Plan:*** Completed in 1993, this FAA sponsored study used a public-private Capacity Team to examine a wide range of capacity initiatives that would increase capacity, decrease delays and improve airport efficiency at Indianapolis International. The improvement alternatives identified by the Team with major delay-savings benefits included: (1) construction of a third independent runway 5R/23L; (2) build a third dependent runway 5C/23C (as an alternative to independent Runway 5R/23L; (3) continue enhancement of reliever airports; (4) remove noise restrictions, and (5) reduce runway occupancy times.

2. ***Indianapolis Metropolitan Reliever Airport System Plan:*** This study was designed by the Indiana Department of Transportation and the Indianapolis Airport Authority to review and refine the role of general aviation facilities in the Indianapolis metropolitan system. Completed in August 1993, this study will (1) function as a major component of the *Indiana State Aviation System Plan Update*, particularly for the Indianapolis metropolitan region; (2) reinforce recent efforts by the Indianapolis Airport Authority to redirect general aviation activity from Indianapolis International Airport to reliever airports located in the Indianapolis metropolitan area, and; (3) serve as the foundation for capital development needs during the next twenty years.

3. ***Aircraft Traffic Counting Program:*** This program involves the continuous development of aircraft operations estimates at non-towered airports throughout the state. Data collected from this program and towered airports are combined with registered and based aircraft data to forecast future activity at Indiana State Aviation System Plan Facilities. These data also assist in prioritizing capital improvement projects by state and federal authorities.

4. ***Aviation Navigational Aids & Automated Weather Observation System Study:*** The purpose of this study was to identify the navigational and weather observation facilities needed to improve opportunities for economic development by increasing the utility and the level of safe access to Indiana's airport

system. This study continues to serve as a guide for system development.

5. ***Northwest Indiana-Northeast Illinois Supplemental Airport Study:*** The State of Indiana was extensively involved in the development of a supplemental air carrier airport for the Northwest Indiana-Northeast Illinois region. Studies of the candidate sites and the Gary Regional Airport were used by the State of Indiana to develop a set of strategic economic development initiatives for the Gary Regional Airport and northwest Indiana.

Engineering Assistance and Capital Improvement Program

- ***Airport Capital Improvement Program:*** The Indiana Department of Transportation is responsible for the development of a statewide five-year Capital Improvement Program (CIP). The purpose of the Capital Improvement Program is to determine the type of project improvements needed over a five-year period, establish priority levels, and to define implementation schedules, costs, and sources of funding. A description of Indiana's *F.Y. 1995-1999 Capital Improvement Program* is provided in a later section of this system plan.

- ***Airport Pavement Management Program:*** The Indiana Airport Pavement Management Program was developed by the Indiana Department of Transportation nine years ago to (1) identify and prioritize systemwide capital improvement needs for airport pavement maintenance and replacement; (2) assist local airport sponsors in the identification of serviceability conditions, and; (3) reinforce the use of safe and cost-effective maintenance by local airport sponsors. This program functions as a statewide airport pavement management system which conforms with current standards of the Federal Aviation Administration.

- ***Airport Obstruction Evaluation Program:*** This program was developed seven years ago by the Indiana Department of Transportation to identify violations of airport imaginary surfaces which critically affect the safety of airport operations throughout Indiana. Information derived from this program is used to eliminate airspace hazards and improve operating safety in the immediate vicinity of state system plan airports.

- ***Engineering Technical Services:*** Under I.C. 8-21-1-8(f), the Indiana Department of Transportation offers technical engineering assistance and general administrative support to local airport sponsors. These engineering services include, but are not necessarily limited to (1) Airport Layout Plan development and review; (2) design and construction plan review; (3) inspection of airport construction projects, and; (4) grant administration of state matching funds, Build Indiana Funds, and federal aviation programs.

- ***Airport Development Program:*** Under I.C. 8-21-11, the Indiana Department of Transportation is responsible for the administration of an Airport Development Grant Fund and a Revolving Loan Fund for public-use airports throughout the state. These funding mechanisms, while established by the legislature, have not been provided with any monies, and are therefore inactive.

- ***Intergovernmental Review Process:*** Under Presidential Executive Order 12372 and established State Clearinghouse Review requirements, the Indiana Department of Transportation reviews all federal fund early coordination submittals for duplication of effort and consistency with state objectives.

Aircraft Registration and Tax Administration Program

The authority to collect and maintain aircraft registration and tax records was initially assigned to the Indiana Department of Transportation by acts of the General Assembly in 1975. Under the Indiana Aircraft License Excise Tax Law (I.C. 6-6-6.5), any resident of Indiana who owns an aircraft, and any nonresident who bases an aircraft in Indiana for more than sixty (60) days in any one (1) calendar year, shall annually register the aircraft with the Indiana Department of Transportation. However, under P.L. 18-1994, the Indiana Department of Revenue assumed total administrative authority for the State of Indiana's Aircraft Registration and Tax Program (I.C. 6-6-6.5). Beginning July 1, 1994, P.L. 18-1994 effectively:

- Transfers all Indiana Aircraft Registration and Tax Program records from the Indiana Department of Transportation to the Indiana Department of Revenue.

Despite this shift in responsibility, the Indiana Department of Transportation will continue to work very closely with the Indiana Department of Revenue, particularly for maintaining and updating the Registered & Based Aircraft Management System.

System Level Profiles and Findings

This section of the *1995-2015 Indiana State Aviation System Plan Update* highlights several key system level profiles and findings in evidence today. The profiles and findings presented here provide a time series "picture" of selected aviation system performance indicators. This and additional performance information (e.g., pavement condition index program data) will enable the Federal Aviation Administration, the Indiana Department of Transportation, and local airport sponsors to develop system level planning strategies based on consistent and measurable performance criteria for all "system plan" facilities identified by the *Indiana State Aviation System Plan.*

Indiana Pilots

The number and profile of Indiana's active pilots changed significantly between 1978 and 1993. Indiana had a total of 15,103 active pilots in 1978. However, by 1993 the total number of active pilots had dropped to 11,567. This drop may have been due to several factors:

- A very fundamental and perhaps permanent shift in personal recreation preferences;
- Increased aging of Indiana's general and the pilot populations;
- Reduced military veterans benefits (e.g., G.I. Bill) eligibility, and;
- Reduced and/or declining real disposable income growth rates brought about by economic restructuring.

Another important comparative shift has been a proportional change in airman classifications. As noted in **Figure 1** on the following page, the proportion of student pilots to the total pilot population of Indiana dropped significantly from 29.5% in 1978 to 17.6% in 1993. Also important to note was the proportional increase of air transport pilots. The drop in total pilots, student pilots, and the increase in air transport ratings would suggest that the state's pilot population has matured.

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A final variable factor is the number of university students currently enrolled in aviation programs at Indiana State University, Purdue University, and Vincennes University. Further research is needed to determine their influence on Indiana's total pilot population.

Indiana Passenger Enplanements

Passenger enplanements at Indiana's primary and commercial service airports increased by approximately 85.1% between 1983 and 1993 (see Figure 2). This growth from 2.13 million passengers in 1983 and 3.95 million passengers in 1993 would have been even greater if Indiana's smaller primary and commercial airports could have retained slot access to Chicago's O'Hare International.

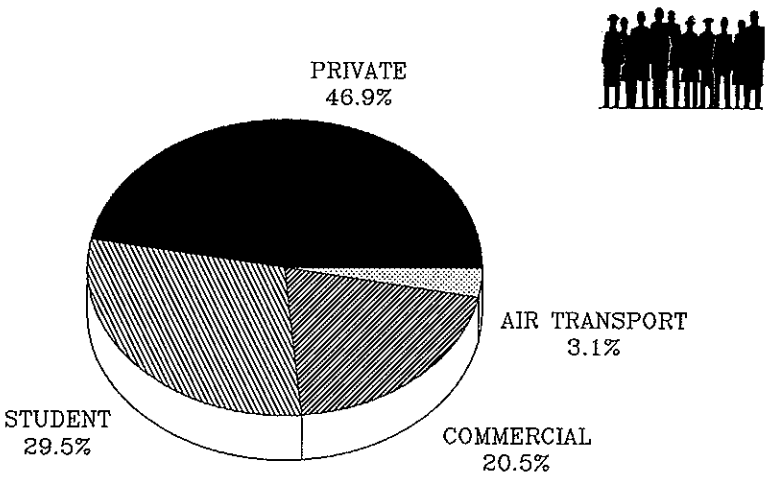
Another important consideration for the State of Indiana is the continuing importance of passenger enplanements at the state's largest primary airports. Proportionally, Indianapolis International, Michiana Regional, Ft. Wayne International, and Evansville Regional accounted for approximately 96.0% of Indiana's enplanements in 1983. Preliminary 1993 data from the FAA suggest that these four primary airports now account for 99.2% of the state's passenger enplanements.

Indiana Registered and Based Aircraft

Shortly after completion of the *1983 Indiana Aviation System Plan* the Indiana Department of Transportation set out to develop and implement a long-term, comprehensive management system to identify Indiana's registered and based aircraft performance characteristics. This management system, documented by the Indiana Department of Transportation in *The State of Indiana Aeronautics: Indiana Registered & Based Aircraft From 1978-1992*, set out to address a broad range of fundamental information questions that are crucial to defining strategic policy issues, policy alternatives, and adopted policy directions. Among the most important strategic policy questions answered were:

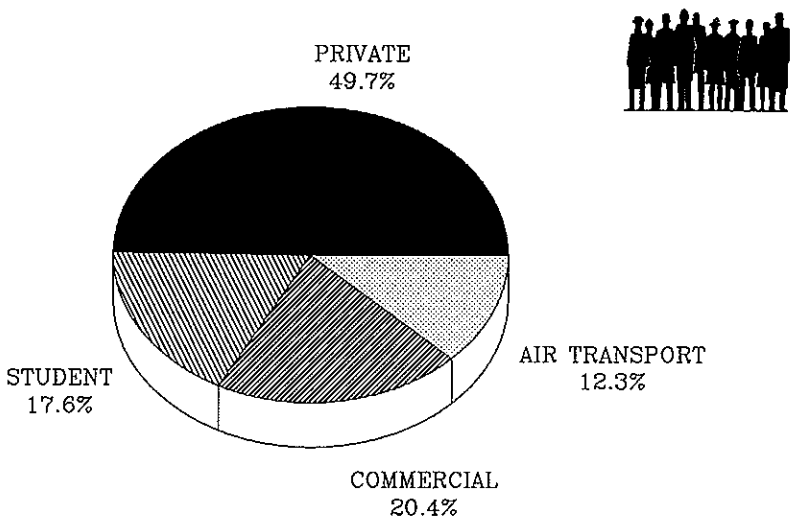
Figure 1

1978 Indiana Pilots By Airman Class



Total Pilots = 15,103

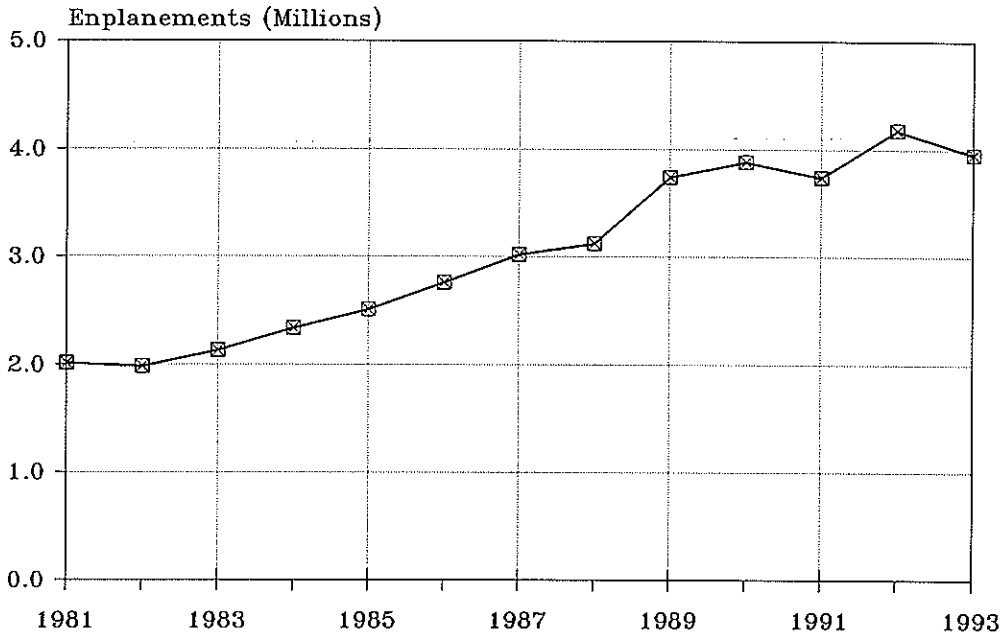
1993 Indiana Pilots By Airman Class



Total Pilots = 11,567

Figure 2

Indiana Passenger Enplanements



Source: INDOT, Intermodal Division, 1994

1. How many aircraft were actively registered in the State of Indiana between 1978 and 1992?

2. Where were these actively registered aircraft based in the State of Indiana between 1978 and 1992?

3. What types of aircraft were actively registered and based in Indiana from 1978 to 1992?

4. What were the principal uses of Indiana's active aircraft assuming that an aircraft owner's registration (i.e., private, business, government) correlates with an owner's use of an aircraft?

5. What trends are in evidence today from a system-level perspective and which trends are most likely to influence future activity levels?

Development, assembly, and completion of the Registered and Based Aircraft Management System over the past six years established the following facts:

- ***Indiana Registered and Based Aircraft.*** A total of 60,849 aircraft registration records were analyzed for the fifteen (15) year period extending from January 1, 1978 to December 31, 1992. Except for national and state economic downturns, Indiana's total number of registered and based aircraft during this period increased by only one hundred and eight (108) aircraft, a 0.18% annual rate. The State of Indiana had a total of 4,047 registered aircraft in 1978. By 1992 this total had increased to 4,155 aircraft. This finding is significant in that many states of the nation have experienced a net loss of general aviation based aircraft since 1980 (see **Figure 3**).

- ***Indiana Registered and Based Aircraft Fleet Mix.*** Changes in the fleet mix (i.e., aircraft type) of the state's aircraft closely paralleled national patterns. For example, the number of single-engine aircraft grew slightly from a total of 3,334 in 1978 to a total of 3,407 in 1992 (see **Figure 4**). However, the total number of multi-engine piston-driven aircraft declined significantly, due in part to their replacement with turbine aircraft by business users. Rotorcraft and other aircraft categories saw slight proportional growth since 1978.

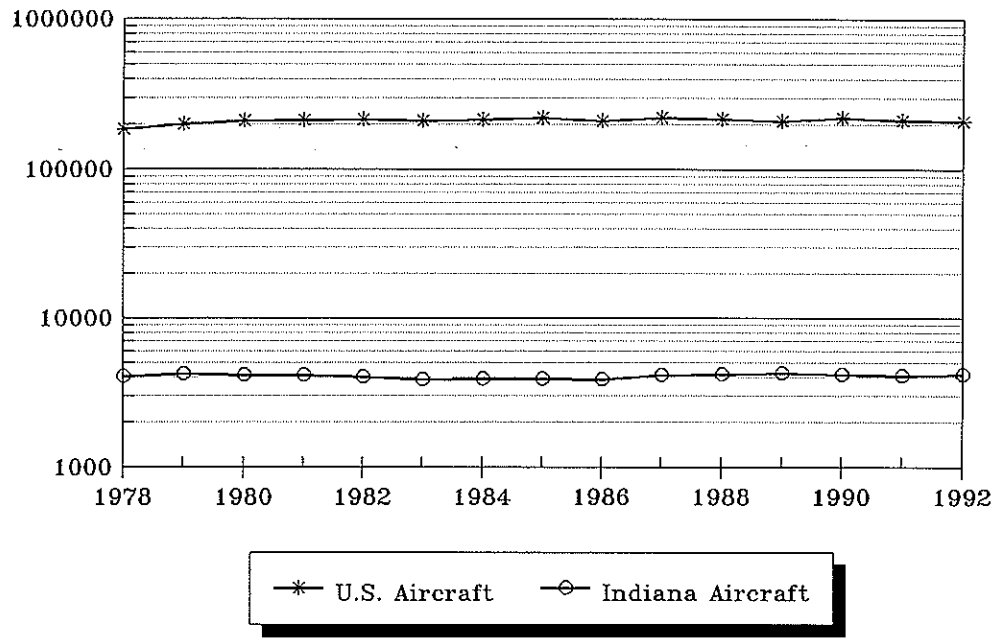
  Factors which will continue to affect future fleet growth include:

  - Continued product liability cost increases which have led to a virtual absence of U.S. manufacturer shipments;
  - Aircraft purchase price increases double the rate of the consumer price index;
  - The repeal of investment tax credits and a general tightening of general tax regulations for personal/business use, and;
  - A fundamental shift in personal recreation preferences given reduced and/or declining real disposable income growth rates brought about by economic restructuring.

  The General Aviation Revitalization Act of 1994, which will limit product liability lawsuits against General Aviation aircraft (20 seats or less) and individual components to an 18-year time frame. This law provides hope to many in the aviation industry. Although Cessna Aircraft Company committed to begin production of several aircraft models once this law was passed, its impact on the aviation economy cannot yet be predicted.

Figure 3

U.S. and Indiana Registered Aircraft



Source: INDOT, Planning Division, 1994.

Table 1

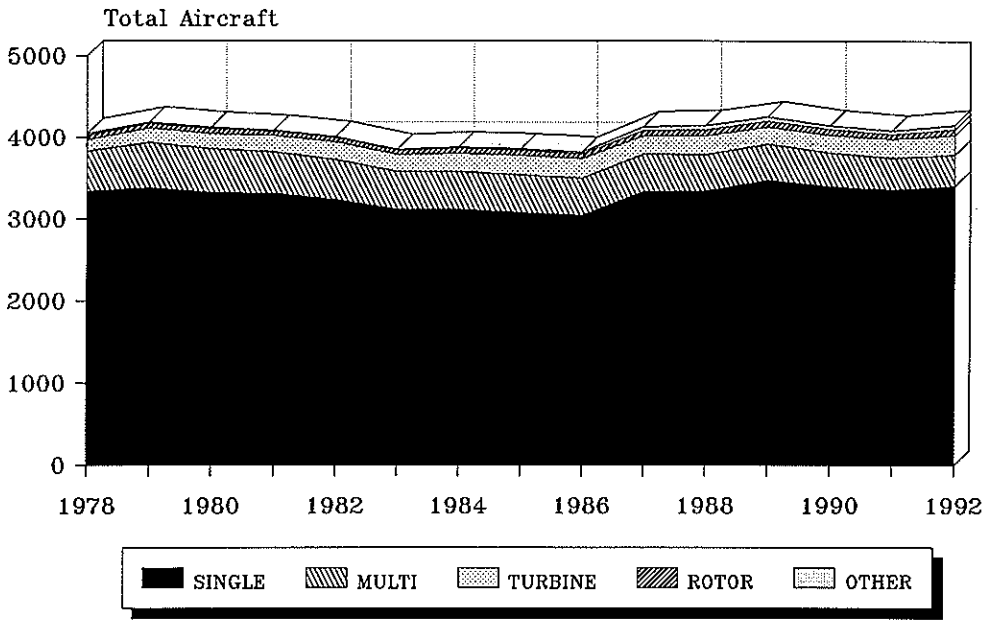
U.S. and Indiana Registered Aircraft From 1978-1992

Year	National Registered Aircraft	National Growth Rate	Indiana Registered Aircraft	Indiana Growth Rate
1978	184,300	- - -	4,047	- - -
1979	198,800	+7.9%	4,193	+3.6%
1980	210,300	+5.8%	4,126	-1.6%
1981	211,000	+0.3%	4,100	-0.6%
1982	213,300	+1.1%	4,013	+0.3%
1983	209,700	-1.7%	3,854	-4.0%
1984	213,300	+1.7%	3,888	+0.9%
1985	220,900	+3.6%	3,864	+0.6%
1986	210,700	-4.6%	3,825	-1.0%
1987	220,100	+4.5%	4,135	+8.1%
1988	217,200	+1.3%	4,152	+0.4%
1989	209,400	-3.6%	4,260	+2.6%
1990	219,600	+4.9%	4,150	-2.6%
1991	212,200	-3.4%	4,087	+1.5%
1992	210,500	-0.8%	4,155	+1.6%
AVG.	210,753	+0.95%	4,057	+0.18%

Source: INDOT, Transportation Planning Division, 1994.

Figure 4

Indiana Registered Aircraft Fleet Mix



Source: INDOT, Planning Division, 1994.

Table 2

Indiana Registered and Based Aircraft Fleet Mix From 1978-1992

Year	Single	Multi	Turbine	Rotor	Other	Total
1978	3,334	492	148	52	21	4,047
1979	3,384	554	178	58	19	4,193
1980	3,323	539	191	60	13	4,126
1981	3,313	505	207	62	13	4,100
1982	3,237	493	218	52	13	4,013
1983	3,113	463	214	52	12	3,854
1984	3,112	465	229	60	22	3,888
1985	3,074	466	246	57	21	3,864
1986	3,048	455	244	55	23	3,825
1987	3,336	463	228	63	45	4,135
1988	3,347	447	234	71	53	4,152
1989	3,477	443	213	71	56	4,260
1990	3,398	413	222	71	46	4,150
1991	3,357	393	234	59	44	4,087
1992	3,407	386	243	68	51	4,155

Source: INDOT, Transportation Planning Division, 1994.

This modification to product liability laws and changes in the FAA's aircraft certification rules could favorably affect general aviation's future, but their long-term implication for Indiana is uncertain. The remainder of the nation will be similarly influenced by these factors.

- ***Indiana Registered and Based Aircraft Ownership and Use.*** Private aircraft ownership and use was found to have exhibited a moderate cyclical pattern from 1978 to 1992 (see **Figure 5**). However, the extent to which this observation is related to economic conditions is unclear. Indiana's business aircraft ownership was found to have remained stable for the past decade at approximately 1,400 aircraft per year. Significantly higher and lower proportions of business aircraft ownership were found on regional and individual facility levels. Business aircraft ownership was found to be strongly influenced by fixed base operator (FBO) services, facility adequacy, community size, local income levels, and proximity to other airports in established market areas.

- ***Indiana Registered and Based Aircraft Forecast Analysis.*** With the knowledge and performance data gained from the registered and based aircraft management system, a set of twenty (20) year system-level forecast scenarios were generated for the State of Indiana (see **Figure 6**). These scenarios included:

  - A *"Declining Growth"* forecast which assumed that declines in rural areas of the state will more than offset growth in selected larger urban areas;

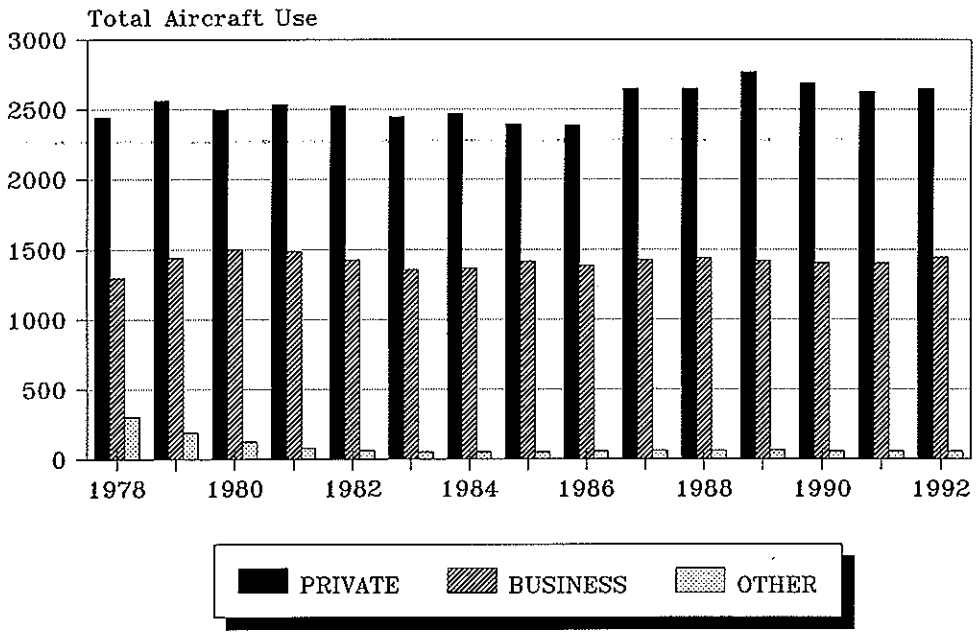
  - A *"No Growth"* forecast which assumed that declines in rural areas of the state will continue to evenly offset growth in selected larger urban areas;

  - A *"Modest Growth"* forecast which assumed that declines in rural areas of the state will be offset by growth in selected larger urban areas;

  The most probable scenario from an empirical standpoint suggests that Indiana's total registered and based aircraft will remain unchanged in relation to current levels, particularly for the next five (5) years.

Figure 5

Indiana Based Aircraft Ownership



Source: INDOT, Planning Division, 1994.

Table 3

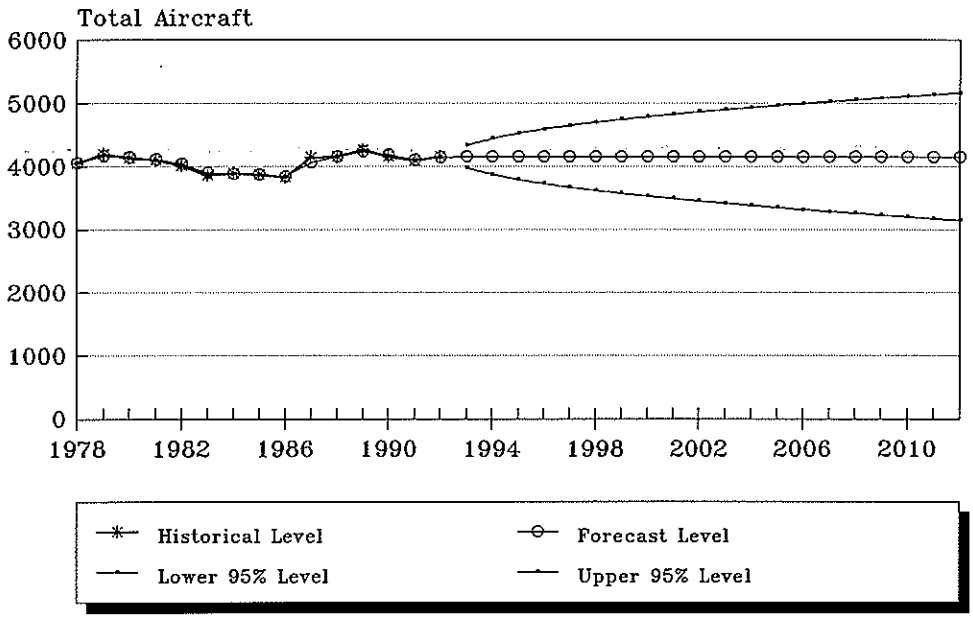
Indiana Registered and Based Aircraft Ownership From 1978-1992

Year	Private	Business	Gov't	Other	Total
1978	2,443	1,301	60	243	4,047
1979	2,563	1,440	56	134	4,193
1980	2,497	1,502	61	66	4,126
1981	2,535	1,487	57	21	4,100
1982	2,526	1,427	54	6	4,013
1983	2,445	1,358	51	0	3,854
1984	2,469	1,366	53	0	3,888
1985	2,394	1,418	52	0	3,864
1986	2,385	1,386	53	1	3,825
1987	2,648	1,428	58	1	4,135
1988	2,650	1,440	61	1	4,152
1989	2,769	1,425	66	0	4,260
1990	2,689	1,403	58	0	4,150
1991	2,627	1,405	55	0	4,087
1992	2,652	1,448	55	0	4,155

Source: INDOT, Transportation Planning Division, 1994.

Figure 6

Indiana Aircraft Forecast



Source: INDOT, Planning Division, 1994.

Table 4

Indiana Registered and Based Aircraft Forecast Analysis

Year	Based Aircraft	INDOT Forecast	Forecast Variance	Forecast Error
1978	4,047	4,047	- - -	- - -
1979	4,193	4,157	-36	-0.9%
1980	4,126	4,143	17	0.4%
1981	4,100	4,107	7	0.2%
1982	4,013	4,035	22	0.6%
1983	3,854	3,894	40	1.0%
1984	3,888	3,880	-8	-0.2%
1985	3,864	3,870	6	0.2%
1986	3,825	3,835	10	0.3%
1987	4,135	4,058	-77	-1.9%
1988	4,152	4,148	-4	-0.1%
1989	4,260	4,233	-27	-0.6%
1990	4,150	4,178	28	0.7%
1991	4,087	4,103	16	0.4%
1992	4,155	4,138	-17	-0.4%
1997	- - -	4,155	- - -	- - -
2002	- - -	4,155	- - -	- - -
2007	- - -	4,155	- - -	- - -
2012	- - -	4,155	- - -	- - -

Source: INDOT, Transportation Planning Division, 1994.

Even with this extremely significant volume of historic data and a very high degree of forecast model accuracy, there are no actual guarantees for its ability to accurately predict future aircraft totals beyond the next five (5) years. The controlling factor for future accuracy in all forecast scenarios, however, will be the total number of registered and based aircraft in rural areas of the state.

- ***Indiana Registered and Based Aircraft Regional Overview.*** Higher rates of registered and based aircraft growth are likely to occur in selected regions of the state, but these gains will most likely be offset by declines in other regions of Indiana. A majority of these registered and based aircraft gains will be in large urbanized area counties.

- ***Indiana Registered and Based Aircraft Local Facility Overview.*** As with the regional growth expectations, few individual aviation facilities are expected to grow to any significant degree in the next five years. The only major exceptions will be facilities located in northwest Indiana, Ft. Wayne, Indianapolis, and southern Indiana counties bordering the Louisville metropolitan region.

Indiana Airport Operations

Airport operations (take-offs or landings) are counted differently at airports with control towers than they are at non-towered airports. Towered airport counts are actual tallies taken by air traffic controllers. These counts are closely documented and monitored by the Federal Aviation Administration. Non-towered airport counts, however, are much more problematic given personnel, time, and fiscal constraints.

In recognition of these factors, a Non-Towered Airport Traffic Counting Program was a second management system program developed by the Indiana Department of Transportation shortly after completion of the *1983 Indiana Aviation System Plan.*

This long-term, comprehensive program initially relied on mechanical "tube" counters and visual on-site samples to estimate non-towered airport operations. This system proved to be unreliable and was quickly replaced with acoustically activated counters which achieve high levels of accuracy.

The analytical methodology of the non-towered count program relies on a geographical stratification of the state's system plan airports. This method of sampling has generated consistent results and answered a number of questions about the relative activity levels of individual airports and/or interrelationships between airports.

The acoustic counters have increased accuracy over the mechanical tube counters by registering the sound of an aircraft's engines at typical flight power settings, so ground traffic and environmental events are not recorded. Counters are placed at airports for a sample period during the year, with seasonal adjustment factors used to estimate annual operations.

Annual estimated operations from monitored airports have been compared to the number of based aircraft located at each facility to determine "operations per based aircraft". This number is then applied to annual based aircraft figures to estimate operations for years between counts. Estimates of operations prepared before the inception of the counting program have been revised to reflect this more accurate method of traffic estimation.

For facilities which have not been directly monitored in the traffic counting program, a statewide average operations per based aircraft has been used. All monitored airports over the entire time frame of the counting program have been combined into an "operations per based aircraft" estimate for the State. In preparing estimates of operations for airports which have not been counted, this estimate is applied to the historic numbers of based aircraft obtained from the Based Aircraft Management System.

Summary registered aircraft and operations data for Indiana's state system plan facilities are shown in **Table 5** and **Table 6**, respectively.

System Plan Recommendations

The system level profiles and findings described in the previous section of this plan led to the identification of individual airport facilities having local, regional, or state significance for Indiana.

This preliminary list of significant facilities took into account historic geographic location, operations data, facility classifications, and current roles. A comparative analysis of these facilities was then made with existing airport locations currently identified as "State Aviation System Plan" facilities. This analysis found only marginal differences between the list of significant facilities

initially identified from the Registered and Based Aircraft Management System and a current list of state system plan facilities.

Given this supportive analysis, the following list of airports shown in **Table 7** identifies the locations recommended for inclusion in the *1995-2015 Indiana State Aviation System Plan* as "State Aviation System Plan" facilities. Also identified in this table are current roles, current classifications, and required facilities given current plans and activity forecasts.

In addition to these existing locations, a set of potential new state aviation system plan locations was identified. These potential new sites listed in **Table 8** may warrant further planning study by local sponsors to determine their feasibility. The FAA has provided funds to INDOT for system planning purposes which will begin the further study required of these potential new facilities. This "Continuing Aviation System Planning Program" will include an examination of the policies and criteria used to recommend these potential new facilities.

The *1995-2015 Indiana State Aviation System Plan* "System Plan Facilities" constitute Indiana's core of aviation facility assets. Aviation facilities identified as "System Plan Facilities" will be the principal recipients of Indiana's strategic development initiatives through the remainder of this decade.

Capital Improvement Program

The Indiana Department of Transportation *Airport Capital Improvement Program* includes a detailed listing of projects that represent a "consensus of priorities" recognized by the Federal Aviation Administration (FAA) and the Indiana Department of Transportation. This Airport Capital Improvement Program also presents a reasonable picture of Indiana's most important public-use airport improvement projects.

The following points summarize the significant elements of the *Indiana Department of Transportation Airport Capital Improvement Program.*

- Federal funds constitute the major source of capital assistance for Indiana's aviation facilities.

- The *Indiana Airport Development State-Local Grant Program* and the *Indiana Airport Loan Program* (P.L. 34-1990) remains unfunded since 1990.

Table 5
1994 Indiana State Aviation System Plan Facilities:
Registered & Based Aircraft History and Forecast Levels

Associated City	Facility Name	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1997	2002	2007	2014
Anderson	Anderson Municipal	77	75	77	77	75	73	71	70	73	79	74	73	76	75	78	80	82	84	86
Angola	Steuben Co.-Tri State	18	21	20	21	23	25	26	26	27	24	22	25	25	27	29	30	30	30	30
Attica	Riley Field	4	4	4	5	5	3	4	3	2	3	5	4	2	2	2	2	2	2	2
Auburn	DeKalb County	24	31	23	28	27	28	29	30	30	30	32	38	32	35	32	40	44	47	49
Bedford	Virgil I. Grissom	44	43	36	36	38	36	30	29	32	38	35	36	28	28	30	32	34	34	34
Bloomington	Monroe County	77	74	76	76	75	79	75	67	76	63	68	80	82	82	86	88	88	88	88
Brazil	Brazil-Clay County	34	36	36	32	28	24	16	17	11	10	12	11	10	10	11	11	11	11	11
Clinton	Clinton	7	7	8	10	11	10	10	11	12	14	11	13	14	14	13	14	15	15	15
Columbus	Columbus Municipal**	106	111	93	95	78	80	63	66	71	75	74	69	66	68	66	69	72	72	72
Connersville	Mettel Field	25	24	24	21	17	15	15	11	11	19	15	15	16	15	16	16	16	16	16
Crawfordsville	Crawfordsville Municipal	28	30	30	26	27	24	27	25	27	27	29	29	27	28	28	29	29	29	29
Decatur	Decatur Hi-Way	2	2	3	3	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4
Delphi	Delphi Municipal	4	3	3	4	7	7	20	17	15	15	17	16	14	8	8	10	12	12	14
Elkhart	Elkhart Municipal	97	106	106	105	105	109	96	102	93	93	97	96	97	88	84	88	91	94	96
Evansville	Evansville Regional	118	128	110	90	101	90	86	72	80	84	72	73	73	64	73	80	84	86	88
Fort Wayne	Ft. Wayne International	168	174	166	131	156	116	106	107	94	121	115	91	87	85	80	85	85	85	85
Fort Wayne	Smith Field	88	81	94	94	81	88	93	93	95	105	107	101	87	77	61	56	55	54	52
Frankfort	Frankfort Municipal	15	22	23	19	26	23	21	21	24	22	21	28	22	18	19	21	21	21	21
French Lick	French Lick Municipal	5	3	3	4	3	2	1	3	2	2	3	8	9	8	6	9	9	9	9
Gary	Gary Regional	75	71	59	71	114	99	116	108	92	94	75	80	76	79	86	92	97	102	104
Goshen	Goshen Municipal	38	34	27	30	35	38	50	51	44	45	45	47	39	36	38	41	43	45	46
Greencastle	Putnam County	14	12	11	11	19	16	13	21	19	19	18	20	16	16	19	21	21	21	21
Griffith	Griffith-Merrillville	42	21	17	24	36	30	24	29	23	38	43	35	37	36	39	55	60	63	65
Huntingburg	Huntingburg Airport	26	29	20	21	17	18	20	19	25	27	25	31	31	30	29	30	30	30	30
Huntington	Huntington Municipal	22	32	27	27	30	27	25	27	26	38	38	48	58	63	57	65	68	71	74
Indianapolis	Eagle Creek Airpark	118	112	136	128	112	102	111	110	109	100	108	91	107	104	113	123	133	143	153
Indianapolis	Ind. Downtown Heliport	---	---	---	---	---	---	---	---	4	3	6	5	6	5	9	11	12	13	14
Indianapolis	Greenwood Municipal	74	74	78	63	76	65	73	60	80	93	92	105	97	96	95	105	115	125	135
Indianapolis	Hendricks County**	119	117	110	115	118	111	122	111	114	102	97	64	77	49	49	60	71	82	93
Indianapolis	Indianapolis International	128	126	126	117	108	118	106	102	96	95	109	82	88	91	97	95	93	91	88
Indianapolis	Indianapolis Metropolitan	83	85	111	97	76	80	91	68	84	92	90	80	88	112	119	130	140	150	160
Indianapolis	Indianapolis Mt. Comfort	---	8	23	30	51	76	90	109	104	127	128	129	111	96	118	128	138	148	158
Indianapolis	Indianapolis Terry	46	57	56	55	51	40	37	41	43	49	45	53	48	49	43	53	63	73	82
Jeffersonville	Clark County	---	---	---	---	31	61	96	98	112	111	119	121	119	120	119	122	125	128	130
Kendallville	Kendallville Municipal	26	25	28	27	26	29	27	28	27	32	32	27	31	34	38	40	42	44	44
Kentland	Kentland Municipal	26	30	27	25	25	24	20	19	14	13	15	15	8	9	8	9	9	9	9
Knox	Starke County	---	---	---	4	5	7	6	12	8	9	17	18	15	19	22	25	25	25	25
Kokomo	Kokomo Municipal	66	72	76	71	57	51	49	56	53	72	61	61	54	50	55	58	58	58	58
Lafayette	Purdue University	55	63	69	83	72	61	61	63	67	75	70	75	75	78	79	82	82	82	82
LaPorte	LaPorte County	23	23	28	27	32	31	36	36	46	52	56	61	55	55	61	63	65	65	65
Lebanon	Boone County	37	34	26	32	33	23	26	24	17	20	20	44	44	43	41	49	57	65	72
Logansport	Logansport Municipal	43	43	35	27	28	24	28	26	22	21	22	21	18	20	20	22	22	22	22
Madison	Madison Municipal	31	29	32	36	36	26	28	27	27	28	23	27	29	29	26	29	29	29	29
Marion	Marion Municipal	54	54	59	64	56	52	46	45	45	44	48	45	44	43	46	48	48	48	48
Michigan City	Michigan City Phillips*	48	49	46	45	41	44	40	43	41	39	42	52	46	52	44	52	54	54	54
Monticello	White County	29	30	34	32	33	28	22	16	17	17	13	18	24	25	27	25	25	25	25
Muncie	Delaware County	58	67	62	68	75	63	61	57	54	53	60	78	62	62	54	65	65	65	65
New Castle	New Castle-Henry Co.	28	28	28	34	32	30	31	32	29	30	28	29	33	29	30	30	30	30	30
North Vernon	North Vernon Municipal	27	31	29	29	30	24	22	22	21	30	29	31	29	14	21	20	25	25	25
Paoli	Paoli Municipal	4	3	4	4	4	10	9	11	7	4	6	7	7	8	7	7	7	7	7
Peru	Peru Municipal	13	12	13	15	12	10	18	12	14	8	8	13	14	10	14	14	14	14	14
Plymouth	Plymouth Municipal	27	27	27	21	21	24	21	19	18	19	24	27	26	26	27	27	27	27	27
Portland	Portland Municipal	19	20	17	20	19	14	17	13	12	12	12	12	11	11	13	12	12	12	12
Rensselaer	Jasper County	20	23	25	26	28	23	18	17	16	16	16	17	16	20	19	19	19	19	19
Richmond	Richmond Municipal	35	52	53	49	46	40	39	46	41	42	41	43	35	36	33	36	36	36	36
Rochester	Fulton County	18	16	21	26	22	21	20	22	21	17	22	25	24	24	22	24	24	24	24
Salem	Salem Municipal	22	15	14	16	13	13	15	11	19	23	34	35	35	37	42	45	45	45	45
Seymour	Freeman Municipal	21	26	27	39	44	43	31	27	27	26	26	35	34	38	37	38	38	38	38
Shelbyville	Shelbyville Municipal	50	58	59	59	47	54	43	48	47	42	54	37	46	38	46	52	58	64	69
Sheridan	Sheridan	30	18	13	17	19	15	21	20	22	18	26	23	25	26	24	25	25	25	25
South Bend	Michiana Regional	96	102	99	98	83	76	81	79	72	100	79	69	64	58	56	59	62	63	63
Sullivan	Sullivan County	30	33	32	38	29	27	36	31	31	24	24	33	29	27	31	32	32	32	32
Tell City	Perry County Municipal	4	11	10	9	8	5	10	14	16	16	15	17	19	19	19	19	19	19	19
Terre Haute	Hulman Regional	59	89	101	94	107	96	103	107	101	72	59	49	53	67	64	67	70	72	74
Valparaiso	Porter County Municipal	110	131	114	121	109	120	107	110	110	107	113	115	121	133	132	135	138	140	142
Wabash	Wabash Municipal	23	20	22	24	19	19	19	23	20	22	19	17	16	17	17	17	17	17	17
Warsaw	Warsaw Municipal	56	63	48	47	49	41	47	48	49	55	60	55	58	56	54	56	58	60	60
Washington	Daviess County	23	25	23	26	29	26	29	28	22	35	34	33	37	31	35	37	37	37	37
Winamac	Arens Field	12	9	12	12	10	10	10	9	10	13	12	10	11	15	14	15	15	15	15
Winchester	Randolph County	21	20	22	28	25	22	19	17	20	15	17	19	16	17	18	18	18	18	18
FACILITY TOTALS		2,970	3,104	3,071	3,059	3,084	2,942	2,982	2,945	2,936	3,081	3,087	3,093	3,033	2,994	3,052	3,266	3,400	3,508	3,600

Source: Indiana Department of Transportation, Transportation Planning Division, 1994.

*Michigan City figures include both Michigan City Phillips and Michigan City Municipal.

**Hendrick County figures include both Brownsburg Airport and Indianapolis Speedway Airport.

Table 6
1994 Indiana State Aviation System Plan Facilities:
Total Operations History and Forecast Levels (Thousands)

Associated City	Facility Name	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1997	2002	2007	2014
Anderson	Anderson Municipal**	36.6	31.3	25.7	27.5	30.8	24.3	27.1	23.1	28.4	32.5	28.4	24.5	21.0	27.0	27.0	26.3	27.7	28.3	28.7
Angola	Steuben Co.-Tri State	9.8	11.5	10.9	11.4	12.5	13.6	14.2	14.2	14.7	13.1	12.0	13.6	13.6	14.7	15.8	18.0	19.1	19.1	19.1
Attica	Riley Field	1.7	1.7	1.7	2.2	2.2	1.3	1.7	1.3	1.0	1.3	2.2	1.7	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Auburn	DeKalb County	8.0	10.4	7.7	9.4	9.0	9.4	9.7	10.1	10.1	10.1	10.7	12.7	10.7	11.7	10.7	13.4	14.7	15.7	16.4
Bedford	Virgil I. Grissom	19.2	18.8	15.7	15.7	16.6	15.7	13.1	12.6	14.0	16.6	15.3	15.7	12.2	12.2	13.1	14.0	14.8	14.8	14.8
Bloomington	Monroe County*	69.0	63.0	60.5	48.0	N.A.	25.2	34.8	39.3	42.3	41.7	42.4	53.7	45.3	37.0	33.0	47.0	49.0	51.0	53.0
Brazil	Brazil-Clay County	11.6	12.2	12.2	10.9	9.5	8.2	5.4	5.8	3.7	3.4	4.1	3.7	3.4	3.4	3.7	3.8	3.8	3.8	3.8
Clinton	Clinton	3.1	3.1	3.5	4.4	4.8	4.4	4.4	4.8	5.2	6.1	4.8	5.7	6.1	6.1	5.7	6.1	6.5	6.5	6.5
Columbus	Columbus Municipal**	N.A.	N.A.	N.A.	N.A.	31.0	30.9	33.2	39.4	39.2	39.0	37.9	36.1	34.6	33.4	36.0	37.0	38.0	39.0	40.0
Connersville	Mettel Field	12.3	11.8	11.8	10.3	8.3	7.4	7.4	5.4	5.4	9.3	7.3	7.4	7.8	7.7	7.8	8.3	8.3	8.3	8.3
Crawfordsville	Crawfordsville Municipal	17.9	19.1	19.1	16.6	17.2	15.3	17.2	16.0	17.2	17.2	18.5	18.5	17.2	17.2	16.2	17.3	17.3	17.3	17.3
Decatur	Decatur Hi-Way	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.0	2.0	1.5	1.8	1.8	1.8	1.8
Delphi	Delphi Municipal	1.7	1.3	1.3	1.7	3.1	3.1	8.7	7.4	6.5	6.5	7.4	7.0	6.1	3.5	3.5	4.4	5.2	5.2	6.1
Elkhart	Elkhart Municipal**	62.0	64.3	60.7	50.4	48.3	46.1	45.9	45.6	40.2	42.8	44.2	44.5	52.4	50.9	44.1	47.0	48.0	49.0	51.0
Evansville	Evansville Regional*	98.8	98.7	92.4	82.7	81.7	89.4	96.2	95.3	95.0	92.0	93.7	96.9	93.4	86.0	87.0	98.0	101.3	103.9	107.0
Fort Wayne	Ft. Wayne International*	N.A.	N.A.	126.2	110.6	94.1	92.0	98.6	100.2	116.0	127.8	121.4	112.0	114.0	102.0	99.0	121.0	137.0	146.0	161.0
Fort Wayne	Smith Field	26.5	24.1	28.1	28.4	24.1	26.2	26.8	28.1	28.7	32.3	32.6	30.8	26.5	23.5	18.6	17.1	16.8	16.5	15.9
Frankfort	Frankfort Municipal	10.1	14.9	15.5	12.8	17.6	15.5	14.2	14.2	16.2	14.9	14.2	18.9	14.9	12.2	12.8	14.2	14.2	14.2	14.2
French Lick	French Lick Municipal	3.1	1.8	1.8	2.5	1.8	1.2	1.0	1.8	1.2	1.2	1.8	4.9	5.5	4.9	3.7	5.5	5.5	5.5	5.5
Gary	Gary Regional**	86.0	72.0	42.0	47.0	53.0	54.0	97.0	104.0	93.0	100.0	105.0	84.0	88.0	55.0	50.0	62.0	69.0	75.0	84.0
Goshen	Goshen Municipal	14.1	12.7	10.0	11.1	13.0	14.1	18.6	19.0	16.4	16.7	16.7	17.5	14.5	13.0	16.1	17.0	19.0	21.0	23.0
Greencastle	Putnam County	5.0	4.3	4.0	4.0	6.8	5.7	4.7	7.5	6.8	6.8	6.5	7.2	5.7	5.7	6.8	7.5	8.3	8.3	8.3
Griffith	Griffith-Merrillville	26.3	13.2	10.7	15.1	22.6	18.8	15.1	18.2	14.4	23.8	27.0	21.9	23.2	22.6	26.3	37.1	40.5	42.5	43.9
Huntingburg	Huntingburg Airport	11.7	13.0	9.0	9.4	7.6	8.1	9.0	8.5	11.2	12.1	11.2	13.9	13.9	13.5	13.0	13.5	13.5	13.5	13.5
Huntington	Huntington Municipal	7.0	10.1	8.5	8.5	9.5	8.5	7.9	8.5	8.2	12.0	12.0	15.2	18.3	19.9	18.0	20.5	21.5	22.4	23.4
Indianapolis	Eagle Creek Airpark	58.7	55.7	67.6	63.6	55.7	50.7	55.2	54.7	54.2	49.7	53.7	41.3	58.3	56.7	56.6	62.2	67.3	72.4	77.4
Indianapolis	Ind. Downtown Heliport	---	---	---	---	---	---	---	---	2.4	1.8	3.6	3.0	3.6	3.0	5.3	6.4	7.0	7.6	8.2
Indianapolis	Greenwood Municipal	31.4	31.4	33.1	26.7	32.2	27.6	31.0	25.4	33.9	39.4	39.0	42.4	44.3	43.9	42.1	53.0	58.0	63.0	67.5
Indianapolis	Hendricks County	38.7	38.0	35.8	37.4	38.4	36.0	39.7	36.1	37.1	33.2	31.5	20.8	25.0	15.9	15.9	30.0	35.5	41.0	46.5
Indianapolis	Indianapolis International*	216.2	208.3	191.2	179.3	173.5	180.7	194.0	199.1	208.7	215.9	220.2	203.2	228.3	248.0	251.6	284.0	319.0	366.0	392.0
Indianapolis	Indianapolis Metropolitan	41.0	42.0	54.8	47.9	37.5	39.5	45.0	33.6	41.5	45.5	44.4	40.5	42.0	53.4	56.7	65.0	70.0	75.0	80.0
Indianapolis	Indianapolis Mt. Comfort	---	3.3	9.5	12.4	21.0	31.3	37.1	44.9	42.9	52.3	52.7	52.0	48.8	42.2	46.7	64.0	69.0	74.0	79.0
Indianapolis	Indianapolis Terry	17.3	21.4	21.0	20.6	19.1	15.0	13.9	15.4	16.1	18.4	16.9	18.4	20.9	21.4	27.8	28.9	34.3	39.6	44.7
Jeffersonville	Clark County	---	---	---	---	19.0	37.5	59.0	60.2	68.8	68.2	73.0	74.3	73.1	70.0	73.1	74.9	76.8	78.6	79.8
Kendallville	Kendallville Municipal	8.2	7.9	8.8	8.5	8.2	9.1	8.5	8.8	8.5	10.0	10.0	8.5	9.7	12.4	13.3	14.0	14.7	15.4	16.1
Kentland	Kentland Municipal	12.7	14.7	13.2	12.2	12.2	11.7	10.0	9.3	6.8	6.3	7.3	7.3	3.9	3.9	3.9	4.4	4.4	4.4	4.4
Knox	Starke County	---	---	---	2.0	2.5	3.4	3.0	5.9	3.9	4.4	8.4	8.9	7.4	9.6	11.1	12.6	12.6	12.6	12.6
Kokomo	Kokomo Municipal	34.8	38.0	40.1	37.4	30.0	26.9	25.8	29.5	27.9	37.9	32.1	32.1	27.9	26.4	29.0	30.6	32.2	32.2	32.2
Lafayette	Purdue University*	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	97.0	103.0	140.0	139.0	129.0	110.0	134.0	120.0	145.0	159.0	169.0	179.0
Laporte	Laporte County	8.1	8.1	9.8	9.5	11.2	10.9	12.6	12.6	16.1	18.2	19.6	21.4	24.5	14.3	16.2	22.1	23.1	24.2	25.2
Lebanon	Boone County	12.0	11.1	8.5	10.4	10.7	7.5	8.5	7.8	5.5	6.5	6.5	14.3	14.3	14.0	13.0	15.9	18.5	21.1	23.5
Logansport	Logansport Municipal	15.6	15.6	12.7	9.8	10.2	8.7	10.2	9.4	8.0	7.6	8.0	7.6	6.5	7.3	6.9	8.8	9.6	9.6	9.6
Madison	Madison Municipal	15.8	14.8	16.3	18.4	18.4	13.3	14.3	13.8	13.8	14.3	11.7	13.8	14.8	14.3	13.3	14.8	14.8	14.8	14.8
Marion	Marion Municipal	29.3	29.3	32.0	34.7	30.4	28.2	25.0	24.4	24.4	23.9	26.0	34.4	23.9	23.3	20.4	26.0	27.1	27.1	27.1
Michigan City	Michigan City Phillips***	16.4	16.7	15.7	15.3	14.0	15.0	13.6	14.7	14.0	13.3	14.3	17.7	15.6	12.4	15.0	16.0	17.1	18.1	19.1
Monticello	White County	12.4	12.8	14.6	13.7	14.1	12.0	9.4	6.9	7.3	7.3	5.6	7.7	10.3	10.7	10.6	10.7	10.7	10.7	10.7
Muncie	Delaware County*	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	54.5	53.1	43.2	55.1	51.4	51.0	58.0	55.0	45.0	63.0	64.0	65.0	66.0
New Castle	New Castle-Henry Co.	7.5	7.5	7.5	9.1	8.5	8.0	8.3	8.5	7.7	8.0	7.4	7.7	8.8	7.8	8.0	8.0	8.0	8.0	8.0
North Vernon	North Vernon Municipal	12.8	14.7	13.8	13.8	14.3	11.4	10.5	10.5	10.0	14.3	13.8	14.7	13.8	6.7	10.0	9.5	11.9	11.9	11.9
Paoli	Paoli Municipal	1.7	1.3	1.7	1.7	1.7	4.4	3.9	4.8	3.1	1.7	2.6	3.1	3.1	3.4	3.1	3.1	3.1	3.1	3.1
Peru	Peru Municipal	10.3	9.5	10.3	11.9	9.5	7.9	14.2	9.5	11.1	6.3	6.3	10.3	11.1	7.9	11.1	11.1	11.1	11.1	11.1
Plymouth	Plymouth Municipal	9.2	9.2	9.2	7.1	7.1	8.1	7.1	6.4	6.1	6.4	8.1	9.2	8.8	8.8	9.2	9.2	9.2	9.2	9.2
Portland	Portland Municipal	13.1	13.7	11.7	13.7	13.1	9.6	11.7	8.9	8.2	8.2	8.2	8.2	7.6	6.9	8.9	8.3	8.3	8.3	8.3
Rensselaer	Jasper County	6.3	7.2	7.8	8.1	8.8	7.2	5.6	5.3	5.0	5.0	5.0	5.3	5.0	5.6	4.7	5.5	5.5	5.5	5.5
Richmond	Richmond Municipal	15.3	22.7	23.1	21.4	20.1	17.4	17.0	20.1	17.9	18.3	17.9	18.8	15.3	15.7	14.4	15.3	16.1	16.6	17.0
Rochester	Fulton County	12.7	11.3	14.8	18.4	15.5	14.8	14.1	15.5	14.8	12.0	15.5	17.7	17.0	16.9	15.5	17.0	17.0	17.0	17.0
Salem	Salem Municipal	7.5	5.1	4.8	5.4	4.4	4.4	5.1	3.7	6.5	7.8	11.6	11.9	11.9	11.9	14.3	15.3	16.0	16.0	16.0
Seymour	Freeman Municipal	9.7	12.0	12.4	18.0	20.2	19.8	14.3	12.4	12.4	12.0	12.0	16.1	15.6	17.5	16.5	18.4	18.4	18.4	18.4
Shelbyville	Shelbyville Municipal	29.3	34.0	34.5	34.5	27.5	31.6	25.2	28.1	27.5	24.6	31.6	21.7	21.2	22.8	26.9	32.3	36.1	39.9	43.0
Sheridan	Sheridan	9.3	5.6	4.0	5.3	5.9	4.7	6.5	6.2	6.8	5.6	8.1	7.1	7.8	8.1	7.4	8.2	9.2	8.2	8.2
South Bend	Michiana Regional*	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	87.1	87.3	106.7	118.8	110.1	89.7	91.4	82.9	118.0	138.0	154.0	161.0
Sullivan	Sullivan County	17.4	19.1	18.6	22.0	16.8	15.7	20.9	18.0	18.0	14.0	13.9	19.1	16.8	15.7	18.0	18.6	19.2	19.7	19.7
Tell City	Perry County Municipal	1.0	1.8	1.6	1.5	1.3	1.0	1.6	2.3	2.6	2.6	2.5	2.8	3.1	3.1	3.1	3.1	3.1	3.1	3.1
Terre Haute	Hulman Regional*	110.3	111.3	113.4	99.1	75.4	76.6	75.0	70.6	72.1	83.5	80.8	73.7	77.6	80.6	92.8	103.0	112.7	116.2	119.8
Valparaiso	Porter County Municipal	41.4	49.3	42.9	45.5	41.0	45.1	40.2	41.4	41.4	40.2	42.5	43.2	42.1	38.7	38.1	45.8	47.4	49.1	50.8
Wabash	Wabash Municipal	12.9	11.2	12.3	13.5	10.7	10.7	10.7	12.9	11.2	12.3	10.7	9.5	9.0	9.5	10.1	10.1	10.1	10.1	10.1
Warsaw	Warsaw Municipal	19.9	22.4	17.0	16.7	17.4	14.6	16.7	17.0	17.4	19.5	21.3	19.5	20.6	19.9	17.3	22.4	23.2	24.0	24.0
Washington	Daviess County	10.3	11.2	10.3	11.6	13.0	11.6	13.0	12.5	9.8	15.7	15.2	14.8	16.6	13.9	14.8	15.6	15.6	15.6	15.6
Winamac	Arens Field	4.6	3.5	4.6	4.6	3.9	3.9	3.9	3.5	3.9	5.0	4.6	3.9	4.2	5.0	5.4	5.8	5.8	5.8	5.8
Winchester	Randolph County	11.8	11.3	12.4	15.8	14.1	12.4	10.7	9.6	11.3	8.5	9.6	10.7	9.0	9.0	10.2	10.2	10.2	10.2	10.2
FACILITY TOTALS		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1,809	1,837	1,988	2,022	1,978	1,958	1,905	1,907	2,195	2,366	2,511	2,633

Source: Indiana Department of Transportation, Intermodal Division and Transportation Planning Division, 1994.

*Federal Control Tower

**Non-Federal Control Tower

***Includes Michigan City Phillips & Municipal

Table 7

Recommended Indiana State Aviation System Plan Facilities

Associated City	Airport Name	Existing Facilities	Required Facilities 1999	Required Facilities 2004	Required Facilities 2014
Anderson	Anderson Municipal	GA TR	PR TR	PR TR	PR TR
Angola	Tri-State	GA GU	GA GU	GA GU	GA GU
Attica	Riley Field	GA BU	GA BU	GA BU	GA BU
Auburn	Auburn-DeKalb County	GA TR	RL TR	RL TR	RL TR
Bedford	Virgil I. Grissom	GA TR	GA TR	GA TR	GA TR
Bloomington	Monroe County	CM TR	CM TR	CM TR	CM TR
Brazil	Brazil-Clay County	GA BU	GA BU	GA BU	GA BU
Clinton	Clinton	GA BU	GA BU	GA BU	GA BU
Columbus	Columbus Municipal	GA TR	GA TR	GA TR	GA TR
Connersville	Connersville Municipal	GA TR	GA TR	GA TR	GA TR
Crawfordsville	Crawfordsville Municipal	GA GU	GA GU	GA TR	GA TR
Decatur	Decatur Hi-Way	GA BU	GA BU	GA BU	GA BU
Delphi	Delphi Municipal	GA BU	GA BU	GA BU	GA BU
Elkhart	Elkhart Municipal	GA TR	RL TR	RL TR	RL TR
Evansville	Evansville Regional	PR N	PR N	PR N	PR N
Fort Wayne	Fort Wayne International	PR S	PR S	PR S	PR S
Fort Wayne	Smith Field	RL BU	RL BU	RL BU	RL BU
Frankfort	Frankfort Municipal	GA GU	GA GU	GA TR	GA TR
French Lick	French Lick Municipal	GA TR	GA TR	GA TR	GA TR
Gary	Gary Regional	RL TR	RL TR	RL TR	RL TR
Goshen	Goshen Municipal	GA TR	GA TR	GA TR	GA TR
Greencastle	Putnam County	GA GU	GA GU	GA GU	GA GU
Griffith	Griffith-Merrillville	GA GU	RL GU	RL GU	RL GU
Huntingburg	Huntingburg Airport	GA TR	GA TR	GA TR	GA TR
Huntington	Huntington Municipal	GA BU	RL GU	RL GU	RL GU
Indianapolis	Eagle Creek	RL GU	RL GU	RL GU	RL GU
Indianapolis	Downtown Heliport	RL HE	RL HE	RL HE	RL HE
Indianapolis	Greenwood Municipal	RL GU	RL GU	RL GU	RL GU
Indianapolis	Hendricks County	RL BU	RL BU	RL GU	RL GU
Indianapolis	International	PR M	PR M	PR M	PR L
Indianapolis	Metropolitan	RL GU	RL GU	RL GU	RL GU
Indianapolis	Mt. Comfort	RL TR	RL TR	RL TR	RL TR
Indianapolis	Terry	RL TR	RL TR	RL TR	RL TR
Jeffersonville	Clark County	RL TR	RL TR	RL TR	RL TR
Kendallville	Kendallville Municipal	GA GU	GA GU	GA GU	GA GU
Kentland	Kentland Municipal	GA BU	GA BU	GA BU	GA BU
Knox	Starke County	GA GU	GA GU	GA GU	GA GU
Kokomo	Kokomo Municipal	GA TR	PR TR	PR TR	PR TR
Lafayette	Purdue University	PR N	PR N	PR N	PR N
LaPorte	LaPorte Municipal	GA GU	GA TR	GA TR	GA TR
Lebanon	Boone County	GA GU	GA GU	GA GU	GA GU
Logansport	Logansport Municipal	GA GU	GA GU	GA TR	GA TR

Table 7

Recommended Indiana State Aviation System Plan Facilities (Continued)

Associated City	Airport Name	Existing Facilities		Required Facilities 1999		2004		2014	
Madison	Madison Municipal	GA	GU	GA	GU	GA	GU	GA	GU
Marion	Marion Municipal	GA	TR	GA	TR	GA	TR	GA	TR
Michigan City	Michigan City Phillips	GA	GU	GA	GU	GA	GU	GA	GU
Monticello	White County	GA	GU	GA	GU	GA	GU	GA	GU
Muncie	Delaware County	CM	TR	CM	TR	CM	TR	CM	TR
New Castle	New Castle-Henry County	GA	GU	GA	GU	GA	GU	GA	GU
North Vernon	North Vernon Municipal	GA	TR	GA	TR	GA	TR	GA	TR
Paoli	Paoli Municipal	GA	BU	GA	BU	GA	BU	GA	BU
Peru	Peru Municipal	GA	GU	GA	GU	GA	GU	GA	GU
Plymouth	Plymouth Municipal	GA	BU	GA	GU	GA	GU	GA	GU
Portland	Steed Field	GA	GU	GA	GU	GA	GU	GA	GU
Rensselaer	Jasper County	GA	GU	GA	GU	GA	GU	GA	GU
Richmond	Richmond Municipal	GA	TR	GA	TR	GA	TR	GA	TR
Rochester	Fulton County	GA	GU	GA	GU	GA	GU	GA	GU
Salem	Salem Municipal	GA	BU	GA	BU	GA	BU	GA	BU
Seymour	Freeman Municipal	GA	TR	GA	TR	GA	TR	GA	TR
Shelbyville	Shelbyville Municipal	RL	BU	RL	TR	RL	TR	RL	TR
Sheridan	Sheridan	GA	BU	GA	BU	GA	BU	GA	BU
South Bend	Michiana Regional	PR	S	PR	S	PR	S	PR	S
Sullivan	Sullivan County	GA	BU	GA	GU	GA	GU	GA	GU
Tell City	Perry County Municipal	GA	BU	GA	BU	GA	BU	GA	BU
Terre Haute	Hulman Regional	CM	N	CM	N	CM	N	CM	N
Valparaiso	Porter County Municipal	GA	TR	GA	TR	GA	TR	GA	TR
Wabash	Wabash Municipal	GA	GU	GA	GU	GA	GU	GA	GU
Warsaw	Warsaw Municipal	GA	TR	GA	TR	GA	TR	GA	TR
Washington	Daviess County	GA	GU	GA	GU	GA	GU	GA	GU
Winamac	Arens Field	GA	GU	GA	GU	GA	GU	GA	GU
Winchester	Randolph County	GA	GU	GA	GU	GA	GU	GA	GU

Source: INDOT, Intermodal Division and Transportation Planning Division, 1994.

Facility Classification Notes: The term "GA" denotes a General Aviation facility; "RL" denotes a General Aviation Reliever facility; "CM" denotes a Commercial Service facility; and "PR" denotes a Primary Service facility.

Facility Role Notes: The term "L" denotes a large hub; "M" denotes a medium hub; "S" denotes a small hub; "N" denotes a non-hub; "TR" denotes a transport facility; "GU" denotes a general utility facility; and "BU" denotes a basic utility facility.

Table 8

Potential New Indiana State Aviation System Plan Facilities

Associated City	New Airport Name	Required Facilities					
		1999		2004		2014	
Aurora/Lawrenceburg	Dearborn County	GA	BU	GA	BU	GA	BU
Bluffton	Wells County	GA	BU	GA	BU	GA	BU
Bloomfield/Linton	Greene County	GA	BU	GA	BU	GA	BU
Boonville	Warrick County	GA	BU	GA	BU	GA	BU
Corydon	Harrison County	RL	BU	RL	GU	RL	GU
Demotte	Jasper/Lake County	GA	BU	GA	BU	GA	BU
Elwood/Tipton	Madison County	GA	BU	GA	BU	GA	BU
Greensburg	Decatur County	GA	BU	GA	BU	GA	BU
Martinsville/Mooresville/ Franklin	Morgan County	GA	GU	GA	GU	GA	GU
North Manchester	Wabash/Whitley Co.	GA	BU	GA	BU	GA	BU
Mt. Vernon	Posey County	GA	BU	GA	BU	GA	BU
Princeton	Gibson County	GA	BU	GA	BU	GA	BU
Rockville	Parke County	GA	BU	GA	BU	GA	BU
Rushville	Rush County	GA	BU	GA	BU	GA	BU

Source: INDOT, Intermodal Division and Transportation Planning Division, 1994.

- Unlike Indiana's highway, public transportation, and railroad programs, the State of Indiana does not have a dedicated revenue source for aviation system development or infrastructure investment. Without a dedicated revenue source for aviation infrastructure investment, state matching funds represent the sole source of state participation in local aviation development projects.

- Projects contained in the Airport Capital Improvement Program are classified by five general categories. In priority order these categories include (1) safety and security projects, (2) preservation projects, (3) standards projects, (4) upgrade projects, and (5) capacity projects. Close adherence to this FAA priority system maximizes Indiana's potential for the receipt of federal funds.

- The anticipated Airport Capital Improvement Program requirements represent forecasts based on planning and engineering studies recognized by the Federal Aviation Administration.

Existing System Overview

The State of Indiana's aviation system encompasses 659 public and private-use aviation facilities, 4,153 registered aircraft, 11,813 airmen and over 13,100 direct aviation jobs at Indiana's fourteen (14) largest airports. The well-being of these system elements is crucial to the business economy of Indiana and the local economy of their associated communities. Given the size and composition of Indiana's aviation infrastructure and an annual $2.6 billion economic impact, the existing system of aviation facilities is one of the state's more important infrastructure assets.

Indiana currently has a total of one hundred and sixteen (116) public-use aviation facilities. Of this total amount, seventy (70) "System Plan Facilities" are identified under the Indiana State Aviation System Plan. These airports are recognized by the Federal Aviation Administration and the Indiana Department of Transportation as the state's most important aviation facilities since they account for over 88% of the state's calendar year 1992 airport operations.

Airport Development Funding Sources

State matching funds for airport projects are extremely important to local airport sponsors. Two additional potential sources of capital funds, the Indiana Airport Development State-Local Grant Program and the Indiana Airport Loan Program have not obtained legislative appropriations since their establishment by the Indiana General Assembly in 1990. Therefore, capital improvement program requests by local airport sponsors for these two state funding sources are under deferment until appropriations become available.

Federal-aid capital assistance grant funds for airport improvements are provided from the Airport and Airway Trust Fund. This fund is generated from aviation taxes and user fees collected from various segments of the nation's aviation community. State funds used to match federal-aid capital assistance grants are provided from general fund appropriations by the Indiana General Assembly. Local funds are derived from a variety of local sources.

With the exception of Indianapolis International Airport, eligible federal-aid projects in Indiana are normally funded with 90% federal funds, 5% state matching funds, and 5% local matching funds. Federal-aid projects for Indianapolis International Airport are normally funded with a 75% federal - 25% local matching fund participation rate.

The allocation of grant funds from the Airport and Airway Trust Fund for public-use airports is largely dependent upon an airport's classification. For

example, primary airports (over 10,000 annual passengers) are allocated "entitlement" funds based on the number of passengers or tons of cargo that are enplaned at the airport in a calendar year. At present, Indiana has five (5) airports that are classified by the Federal Aviation Administration as primary airports. They are:

- Evansville - Evansville Regional Airport;
- Fort Wayne - Fort Wayne International Airport;
- Indianapolis - Indianapolis International Airport;
- South Bend - Michiana Regional Airport.
- West Lafayette - Purdue University;

Commercial Service airports (over 2,500 annual passengers) and Reliever airports receive federal discretionary funds which are allocated by the FAA at the discretion of the U.S. Secretary of Transportation. The following three (3) airports are currently identified as Indiana's commercial service facilities:

- Bloomington - Monroe County Airport.
- Muncie - Delaware County-Johnson Field Airport;
- Terre Haute - Hulman Regional Airport;

Reliever airports are defined as general aviation airports in metropolitan areas which are intended to reduce congestion at large primary airports by providing general aviation pilots with alternative landing areas. Reliever airports also provide surrounding metropolitan and suburban areas with access to air transportation. Under the Airport and Airway Improvement Act of 1982, a minimum of ten percent (10%) of the national airport improvement program funds are reserved for reliever airports. The 1994 reauthorization of the Airport Improvement Program cuts this to only five percent (5%) which will severely hinder the programming of projects at Indiana's reliever airports.

Indiana currently has a total of ten (10) reliever facilities and one (1) new reliever airport location. These facilities provide general aviation relief for Chicago Midway Airport, Ft. Wayne International, Indianapolis International, and Standiford Field in Louisville, Kentucky. At present, Indiana's general aviation reliever airports include:

- Clark County Airport;
- Fort Wayne Smith Field;
- Gary Regional Airport;
- Indianapolis Eagle Creek Airpark;
- Indianapolis Downtown Heliport;

- Indianapolis Eagle Creek Airpark;
- Indianapolis Downtown Heliport;
- Indianapolis Greenwood Municipal;
- Indianapolis Hendricks County (New);
- Indianapolis Metropolitan Airport;
- Indianapolis Mt. Comfort Airport;
- Indianapolis Shelbyville Municipal;
- Indianapolis Terry Airport.

Airports which have fewer than 2,500 annual passengers and do not provide specific reliever functions are classified as general aviation facilities. General aviation accounts for the majority of all civil aircraft operations throughout the nation and in Indiana. Fifty-one (51) state system plan facilities are classified as general aviation facilities. They include:

- Anderson - Anderson Municipal;
- Angola - Tri-State Airport;
- Attica - Riley Field;
- Auburn - DeKalb County;
- Bedford - Virgil I. Grissom;
- Brazil - Brazil-Clay County;
- Clinton - Clinton Airport;
- Columbus - Columbus Municipal;
- Connersville - Connersville Municipal;
- Crawfordsville - Crawfordsville Municipal;
- Decatur - Decatur Hi-Way;
- Delphi - Delphi Municipal;
- Elkhart - Elkhart Municipal;
- Frankfort - Frankfort Municipal;
- French Lick - French Lick Municipal;
- Goshen - Goshen Municipal;
- Greencastle - Putnam County;
- Griffith - Griffith-Merrillville Airport;
- Huntingburg - Huntingburg Airport;
- Huntington - Huntington Municipal;
- Kendallville - Kendallville Municipal;
- Kentland - Kentland Municipal;
- Knox - Starke County;
- Kokomo - Kokomo Municipal;
- LaPorte - LaPorte Municipal;

- Lebanon - Boone County;
- Logansport - Logansport Municipal;
- Madison - Madison Municipal;
- Marion - Marion Municipal;
- Michigan City - Michigan City Municipal;
- Monticello - White County;
- New Castle - New Castle-Henry County
- North Vernon - North Vernon Municipal;
- Paoli - Paoli Municipal;
- Peru - Peru Municipal;
- Plymouth - Plymouth Municipal;
- Portland - Steed Field;
- Rensselaer - Jasper County;
- Richmond - Richmond Municipal;
- Rochester - Fulton County;
- Salem - Salem Municipal;
- Seymour - Freeman Municipal;
- Sheridan - Sheridan Airport;
- Sullivan - Sullivan County;
- Tell City - Perry County Municipal;
- Valparaiso - Porter County;
- Wabash - Wabash Municipal;
- Warsaw - Warsaw Municipal;
- Washington - Daviess County;
- Winamac - Arens Field;
- Winchester - Randolph County.

With the exception of seven (7) airports, all of the facilities listed above are included in the *National Plan of Integrated Airport Systems* (NPIAS) and are therefore eligible to receive federal funds from the Federal Aviation Administration. The five airports not currently included in the NPIAS are Attica Riley Field, Brazil-Clay County, Clinton, Decatur Hi-Way, and the Boone County (Lebanon) Airport.

General Aviation airports are funded from FAA State Apportionment Funds using a formula based on population and the land area of the state. Since Indiana's land area is fixed and its population has remained stable, state apportionment funds for general aviation projects for federal Fiscal Year 1994 is estimated at approximately $3.14 million.

State apportionment funds may not be used for primary and non-primary commercial service airports or for airports defined as non-commuter service air carrier airports under the *Airport and Airway Safety, Capacity, Noise Improvement, and Intermodal Transportation Act of 1992.*

State apportionment funds are allocated for projects which have been programmed in the Indiana Airport Capital Improvement Program by the Indiana Department of Transportation. The selection of general aviation airport projects for the Indiana Airport Capital Improvement Program is based on an extensive comparative analysis of project requests submitted to the Indiana Department of Transportation and a federal priority system outlined in the following section.

In addition to entitlement funds and state apportionment funds, all qualified airports are eligible for discretionary capital funds from the Federal Aviation Administration. For the five year period extending from Federal Fiscal Years 1989 through 1993, Indiana airports received over $102.4 million in federal discretionary funds. The vast bulk of these funds, however, were obtained for major development projects at Indianapolis International Airport.

Airport Capital Improvement Program Priorities

The Indiana Airport Capital Improvement Program is designed to support federal, state and local priorities assigned to project applications submitted to the Indiana Department of Transportation, under the state Channeling Act, I.C. 8-21-8-1(b), and accepted by the Federal Aviation Administration. Since federal funds constitute the major source of capital assistance, Indiana's program closely follows a project priority system developed and used by the Federal Aviation Administration. Close adherence to this priority system maximizes Indiana's potential for the receipt of federal funds.

Projects contained in the Airport Capital Improvement Program are classified by five general categories. Each of these categories are listed below in priority order.

- ***Safety and Security Projects.*** The Federal Aviation Administration and the Indiana Department of Transportation recognize safety and security as the highest priority for Indiana's aviation system users. This category also includes items designated for priority treatment by the U.S. Congress. Project examples include friction overlays, runway grooving, landing and/or navigational aids, crash fire/rescue vehicles, and security equipment.

- ***Preservation Projects.*** These projects involve the reconstruction of existing airport features to assure that they will remain in satisfactory condition for continued use. Examples of preservation projects include pavement overlays and lighting reconstruction.

- ***Standards Projects.*** Projects within this category typically provide for upgrading and expanding airport facilities to correct deficiencies in capacity or operational ability. These deficiencies may be due to the number and type of aircraft currently using or committed to using an airport. Project examples in this category include obstruction removal, lighting of existing pavements, apron expansions and taxiway extensions which allow an airport to achieve current FAA standards.

- ***Upgrade Projects.*** These projects provide for the accommodation of larger aircraft types which are required for current and/or future service demands. Typical examples include runway and taxiway extensions, widening and/or strengthening to provide for changes in the use of the airport by larger class aircraft.

- ***Capacity Projects.*** This category includes projects that are directed toward increasing airport operational capacity beyond current designed uses. Capacity projects typically include new runways, new associated taxiways, new and/or expanded apron areas, and passenger terminal expansions. Under increasingly rare circumstances, capacity projects may involve the construction of new airports. The construction of new airports is primarily focused on general aviation facilities given the cost and difficulty of constructing new commercial aviation facilities.

Planning and engineering support data used to assist in the establishment of project priorities are developed from several different sources. Primary, commercial service, and reliever airport support data are principally obtained from the local airport sponsors and the Federal Aviation Administration. Planning and engineering support data for general aviation airports are developed by the airport sponsor and the Indiana Department of Transportation under state aviation system planning grants from the Federal Aviation Administration.

State Matching Fund Needs

The issue of state matching funds for Federal Aviation Administration grants is critical since:

- Unlike Indiana's highway, public transportation, and railroad programs, the State of Indiana does not have a dedicated revenue source for aviation system development or infrastructure investment, and;

- Indiana has not recently funded state-local programs or the aviation loan fund (P.L. 34-1990).

Given these facts, the State of Indiana's 5% state matching funds for Federal Aviation Administration grants currently represents the sole source of state investment in local airport development projects.

As previously noted, eligible federal-aid projects are normally funded with 90% federal funds, 5% state matching funds, and 5% local matching funds. Federal-aid projects for Indianapolis International Airport are normally funded with a 75% federal - 25% local matching fund participation rate. Indiana's federal-aid grants by facility type are shown in **Table 9**.

Conclusions

The Airport Capital Improvement Program is based on a consensus of priorities. Federal funds constitute the major source of capital assistance for Indiana's aviation facilities. The Indiana Airport Development State-Local Grant Program and the Indiana Airport Loan Program remain unfunded since 1990. Without a dedicated revenue source for aviation system development or infrastructure investment, state matching funds represent the sole source of state investment in local aviation development projects.

Challenges and Opportunities

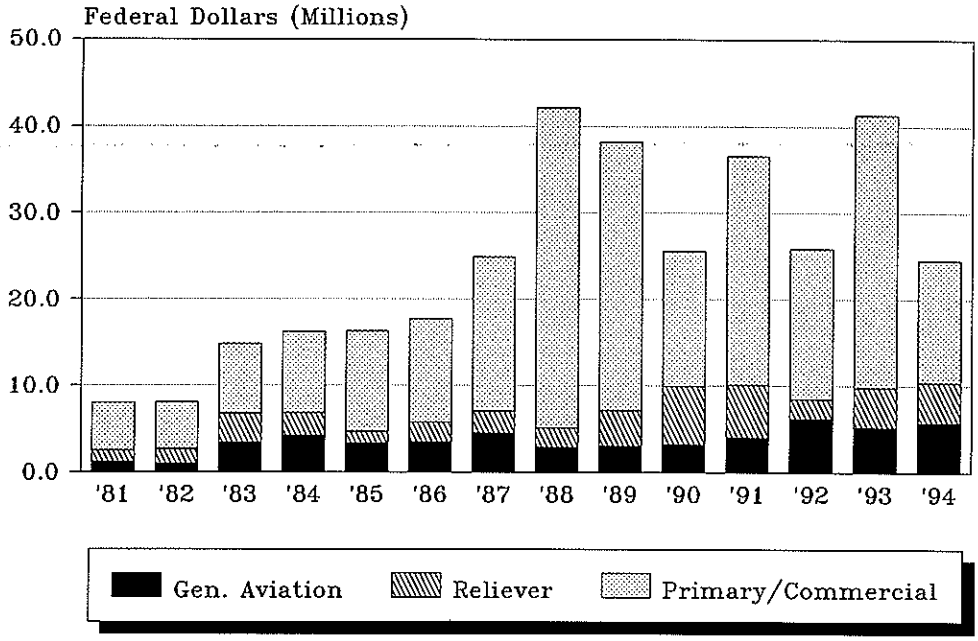
Indiana's aviation system faces both challenges and opportunities over the next twenty years. The state's challenges involve identifying and mobilizing resources for airport development, as well as removing barriers to efficient and effective airport operations. The opportunities derive from Indiana's strategic geographic location, natural endowments, and human resources.

Future Challenges

- **Funding.** The availability of funds to improve and preserve airports is one of the most critical factors influencing the future of the Indiana State Aviation System. The following are several challenges facing the State System with regard to funding:

Figure 7

Indiana Federal Aviation Grants



Source: INDOT Aeronautics, 1994.

Table 9

Indiana Federal-Aid Grants By Facility Type

Fiscal Year	General Aviation	Reliever Facilities	Primary & Commercial	Total Federal Grant Funds
1981	$1,224,608	$1,310,000	$ 5,509,646	$ 8,044,254
1982	968,157	1,674,996	5,428,576	8,071,729
1983	3,425,977	3,349,017	8,116,743	14,891,737
1984	4,227,660	2,647,245	9,363,913	16,238,818
1985	3,281,563	1,346,481	11,640,259	16,268,303
1986	3,492,523	2,310,325	11,933,938	17,736,786
1987	4,516,164	2,516,067	17,884,680	24,916,911
1988	2,910,184	2,233,836	36,945,334	42,089,354
1989	2,998,262	4,080,119	31,085,708	38,164,089
1990	3,223,060	6,768,670	15,616,387	25,608,117
1991	3,960,128	6,125,272	26,504,660	36,590,060
1992	6,119,501	2,290,526	17,428,643	25,838,670
1993	5,223,761	4,573,302	31,516,236	41,313,299
1994	$4,879,500	$5,479,483	$14,148,279	$24,507,262
Total	**$50,451,048**	**$46,705,339**	**$243,123,002**	**$340,279,389**

Source: INDOT, Aeronautics Section, 1994.

1. ***Reliever Airports.*** Recent changes in AIP reauthorizations have cut the set-aside for reliever airports in half. For Indiana, this means that the importance of being a reliever airport may diminish, since the schedule for implementing development programs will drastically slow down projects in the geographic regions of the State (metropolitan areas) that are experiencing the highest growth rates. The addition of the newly approved Hendricks County Airport to the system, at an estimated cost of approximately $8.6 million to construct, will force reliever airports to compete for much scarcer funds, much like the other remaining General Aviation airports.

2. ***General Aviation.*** A total of forty-six (46) Indiana airports compete with each other for approximately $3 to $3-1/2 million in annual State Apportionment funds each year. With already identified needs easily able to absorb this total amount in a single year, or even a single project, development programs progress slowly and are broken into phases. This phasing and delay increases total cost and causes many missed economic opportunities. In addition, two airports formerly in the Primary Category have been re-classified as General Aviation facilities due to a re-interpretation of the types of passengers enplaned. Both of these airports are in the middle of development programs that were based on the ability to obtain AIP entitlement funds. It will be a daunting, if not impossible, challenge to find a way to complete these two development programs from the small and unpredictable General Aviation pot.

3. ***Commercial and Primary.*** The Airport and Airway Trust Fund continues to be subject to the vagaries of politics and the federal budget deficit. Each year more revenues are taken in from the airline passenger ticket tax, aviation fuel taxes, cargo waybills, and other funding mechanisms than Congress allows the FAA to spend for planning and construction. The challenge presented to Indiana's aviation interests will be to apply pressure for future AIP reauthorizations that are insulated from political pressure and that fully allocate all trust fund revenues.

- **Major Hub Access.** Access to major hub airports is a critical issue that currently impacts the Indiana Aviation System and will cause related impacts on funding. When analyzing the issue of hub access, the underlying factor is actually "slot" control for these major hub airports. Access and slot control will have impacts in three major areas, including:

    1. ***Essential Air Service (EAS).*** Indiana's small communities have historically supported profitable airline service through access to connecting flights at major hub airports like Chicago's O'Hare International Airport. After deregulation of the airlines in the 1980's, many small communities lost this service because the regional and commuter airlines which owned O'Hare slots were acquired by major nationwide airlines. The major airlines changed the destinations, equipment, flight frequencies, and fares at the smaller communities to better fit their national operations. These changes hurt enplanement levels at smaller airports, requiring the EAS program to hold-in carriers at airports which they no longer desired to serve.

    2. ***Subsidies.*** The impacts of slots and deregulation have caused many smaller communities which were once able to support profitable service to major hub airports to now depend upon subsidized service through the EAS program. The lack of access created by slot restrictions at major hub airports forces travelers to use a hub that usually does not offer the connecting flights they need to fulfill their business and leisure travel requirements. Since preferred travel patterns are disrupted by the lack of access, diminished enplanements are the result. This causes the need for operating subsidies to air carriers under the Essential Air Service Program in order to provide the minimum levels of service to small communities.

    3. ***Economic Development.*** The lack of access to major hubs not only causes the need for subsidies, but it also undermines the economic development activities of the small communities involved. In today's marketplace with decentralized business operations and centralized management, air transportation facilities can be a critical item in retaining an existing facility or locating a new one. The dependability, timing, and cost of airline connections is often considered by business planners,

and lack of access to the national hub can significantly hamper these efforts.

4. ***Airport Classification.*** The declining enplanement levels brought about by lack of access to major hubs has caused several airports to be reclassified from the Primary to the Commercial Service category, and from the Commercial Service category to the General Aviation category. Statewide capital improvement programming and individual airport development programs were designed with the original classifications in mind. With funding priorities shifting nationally away from small airports toward larger facilities, the capability to conclude halfway completed development programs has been significantly eliminated, while nearly all of the activity that generates the need for the improvements remains. In addition, the suspension of operating subsidies to Essential Air Service points within a seventy (70) mile radius of a medium or large hub airport has aggravated this situation. The loss of subsidies has forced airports that were formerly in the "primary" category drop down to the "commercial service" or "general aviation" categories.

   New developments in the application of slot control regulations may provide a solution to the challenge of access to major hubs. In the FAA Authorization Act of 1994, Congress created an exemption authority allowing the U.S. DOT to make take-off and landing slots available to air carriers under the Essential Air Service program. Under this new authority, six Indiana communities were made eligible to apply for slots at Chicago's O'Hare Airport. Applications for slots were taken by U.S. DOT in August and September of 1994, and it is reported that service under this new program is expected to start in early November.

Current Opportunities

- **Airport Economic Activity.** Several industries have chosen Indiana for their expansion, relocation, or new facility sites. They include the following:

  1. ***United Airlines Indianapolis Maintenance Center.*** The United Airlines Indianapolis Maintenance Center (IMC) located at

the Indianapolis International Airport represents one of the largest single economic development projects in the nation. As noted by United Airlines, "this world class aviation maintenance facility focuses on the 'products' - the airframe and engines of the United Airlines Boeing 737 fleet. The program for the facility is based on the fleet projections for the next decade. It will ultimately support over four hundred 737 aircraft and provide five hundred CFM56-3 engine repairs annually. The facility is designed to meet the demand in the year 2003 and beyond. The IMC is located on 300 acres on the northwest side of Indianapolis International Airport. The facility will include hangars, airframe repair shops, engine repair shops and central facilities for utilities and site support.

The IMC will be constructed and occupied in phases. The majority of the first phase, Phase A-1, will be occupied in the fourth quarter of 1994. Phase A-1 will provide approximately one-half of the ultimate eighteen aircraft bays. Part of this phase, however, will be occupied earlier. Hangar One and the central plan became operational in the fourth quarter of 1993 to meet the service requirements for the 737 "C" Checks. The remainder of the IMC program will be constructed and occupied to match the maintenance demands of the 737 fleet. The final phase is programmed for the year 2003." The Phase One budget is currently placed at $552.19 million.

2. ***FedEx Package-Sorting Hub.*** FedEx announced in August 1994, that it will double the size of its package-sorting hub at Indianapolis International. The expansion will allow FedEx to process 81,000 packages per hour in Indianapolis, up from 51,000 per hour today. Indianapolis is the second largest hub for FedEx. This three-year $210.0 million expansion will create 1,000 direct jobs by 1997 when construction is completed.

- ***Out of State Based Aircraft.*** Congestion and infrastructure changes, as well as pressure to convert airport land to residential and commercial uses has provided an opportunity for Indiana airports to attract aircraft from across State borders, particularly in the following two (2) metropolitan regions:

1. ***Chicago Metropolitan Region.*** One airport in northwest Indiana attracted 21 aircraft in 1993 alone that had not been registered in Indiana since before 1978. Other Indiana airports have reported similar gains.

2. ***Louisville, KY Metropolitan Region.*** Development at Standiford Field has caused major changes in infrastructure patterns at that facility, opening the door for airports in southern Indiana to serve aircraft wishing to relocate.

- ***Urbanization of Aircraft.*** The statewide trend for aircraft owners from rural counties to sell aircraft and owners from urbanized counties to purchase or maintain aircraft will benefit the metropolitan areas.

- ***Completion of Notable Projects.*** The completion of a long-standing airport development goal can spur aviation activity in a community. Examples include:

    1. ***Fort Wayne International.*** Completion of a major passenger terminal renovation and expansion project coupled with major renovation of the airside facilities.

    2. ***Michiana Regional Transportation Center.*** The former Michiana Regional Airport can be considered Indiana's premier intermodal facility, with airline service, over-the-road bus service, and commuter rail service, all accessible from the same passenger terminal building.

    3. ***Greenwood Municipal Airport.*** Completion of a replacement runway should increase usage of the facility by corporate aircraft. Construction of a new Interstate highway interchange less than one mile from the airport's entrance road should provide it with the shortest "plane to appointment" time in Downtown Indianapolis.

    4. ***DeKalb County Airport.*** The decision to locate and construct a new state-of-the-art steel "mini-mill" in DeKalb County will enhance business aviation activity at the newly expanded DeKalb County Airport.

5. ***Gary Regional Airport Enterprise Zone.*** The completion of a Phase I *Airport Master Plan* in 1994 supported the development of air cargo capabilities and associated multi-modal facilities. This plan and the Indiana General Assembly also recognized the value of the airport infrastructure by recognizing and establishing Indiana's second Enterprise Zone with Gary Regional Airport as the anchor for development. Completion of the plan and the creation of the enterprise zone will strengthen public-private development partnerships surrounding the Gary Regional Airport and bring about a greater focus on the airport's role as part of a multi-modal regional transportation system.

- ***Technological Improvements, Avionics (Global Positioning System).*** More reliable than Loran-C, lower cost than a Microwave Landing System (MLS), the Global Positioning System (GPS) promises to be the navigation system of the future. At about the same cost as a standard communication radio, GPS may be able to accommodate approaches with near-Instrument Landing System (ILS) minimums with much less cost and site preparation than an ILS currently requires.

- ***Legislative Reform of Product Liability.*** A bill to limit the exposure of general aviation manufacturers (of aircraft with less than 20 seats) to product liability lawsuits was recently enacted by the U.S. Congress. One general aviation aircraft manufacturer has promised to begin production of three models of piston-powered propeller aircraft which have been long out of production. The passage of this law, the General Aviation Revitalization Act of 1994 could the first step toward the recovery of the general aviation industry and a boon to employment in the aircraft manufacturing sector.

Major Indianapolis Metropolitan Airport System Changes

The Indianapolis Metropolitan Airport System has remained relatively stable over the years, especially when compared to the declines experienced in other states and regions of Indiana. The growth of air cargo and passenger enplanements, as well as the trend for major urban areas to experience growth in general aviation based aircraft are the market forces which have caused the need for two major system-expanding projects in the Indianapolis Metropolitan System as noted below.

- ***New Parallel Runway at Indianapolis.*** Continuing increases in both passenger and air cargo has prompted the need for additional capacity at Indianapolis International Airport. A series of recent planning studies for Indianapolis International found that the development of additional capacity was feasible with the construction of a new parallel runway aligned with the existing Runway 5-23. This runway, designated Runway 5L-23R, will be constructed over the 1994 and 1995 time frame.

- ***New General Aviation Reliever Airport.*** The Indianapolis Speedway Airport on the west side of Indianapolis has been slated for closure for several years, due to the fact that it poses an airspace conflict with Indianapolis International. In order to preserve the capacity of the Indianapolis Metropolitan Airport System, planning studies were initiated several years ago to determine the feasibility, the location, and the environmental impacts of constructing a new replacement general aviation reliever airport on the west side of Indianapolis. Development of a new airport was found to be feasible and a new site just east of Danville, Indiana, was selected as the most feasible site. An Airport Master Plan and an Environmental Assessment were prepared and approved by the Federal Aviation Administration. The need for a replacement general aviation facility in Hendricks County was further documented in the *1993 Indianapolis Metropolitan Airport System Plan Update.* The Indianapolis Airport Authority has agreed to act as the project's sponsor and funds are currently being sought for land acquisition. Construction will involve phases over several years. When completed, this facility will (1) provide additional capacity to the Indianapolis metropolitan airport system for general aviation operations, and; (2) allow for a reduction in small/slow aircraft operations at Indianapolis International as recommended in the *1993 Indianapolis International Airport Capacity Enhancement Plan.*

Summary Conclusions

The challenges and opportunities facing Indiana's aviation system will have significant impacts on future levels of system activity. Activity levels have remained relatively stable, especially when compared to the fluctuations experienced at the national level. If the challenges facing Indiana's aviation system are not resolved successfully, the result could be an overall decline in aviation activity. On the other hand, if the aviation industry is able to successfully capitalize on the opportunities currently presented, the result could be a resurgence of growth and a revitalized and recharged aviation system.